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CONDUCTED BY

GEORGE W. JOHNSON, F.R.H.S., AND ROBERT HOGG, LL.D.

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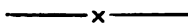
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## TO OUR READERS.



At the commencement of another year we desire to acknowledge the aid rendered to us by those contributors who have enabled us to maintain so well the popularity and usefulness of the *Journal of Horticulture*.

If during the year that is past our paper has refreshed any weary brain, has solaced the active man of business, has been the cherished companion of many a son of toil, has proved instructive and entertaining to the under gardener, and has been accepted as a welcome guest in the homes of those who have won their spurs in the field of horticulture, we are content—our work has not been fruitless.

There is something a little different between the editors and the subscribers of a horticultural journal from that of the majority of newspapers. They have to consider the interests of all kinds of readers, while we only have to think of those pursuits with which we are particularly identified, so that there is a mutual sympathy between us, an interest in one another's welfare, which we feel assured will not only continue but increase.

That the present year will be brighter and better than the last, that enmity (if any has a place amongst gardeners) will vanish, that old friendships will be cemented, and new, pleasant, and healthy associations made, and that horticulture may flourish, is the new year's wish of

THE EDITORS.





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## WEEKLY CALENDAR.

Day of Month	Day of Week	JULY 3-9, 1879.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.							
3	TH	Canterbury Rose Show.	74.0	60.3	62.1	3 50	8 18	8 28	2 46	15	3 53	184
4	F	Tunbridge Wells Horticultural Exhibition.	76.1	60.3	63.2	3 51	8 18	8 58	4 5	16	4 4	185
5	S	Alexandra Palace Rose Show.	77.1	60.3	63.7	3 52	8 17	9 22	5 28	16	4 14	186
6	SUN	4 SUNDAY AFTER TRINITY.	76.0	60.8	63.4	3 53	8 17	9 41	6 51	17	4 24	187
7	M	[Roses and Pelargoniums.	73.7	60.8	62.3	3 53	8 16	9 57	8 9	18	4 34	188
8	TU	Royal Horticultural Society—Great Exhibition of	74.0	60.0	62.0	3 54	8 16	10 11	9 24	19	4 44	189
9	W	Horticultural Exhibitions at Newcastle, Huntingdon, [and Norwich.	74.1	49.4	61.8	3 55	8 15	10 24	10 36	20	4 55	190

From observations taken near London during forty-three years, the average day temperature of the week is 75.5°; and its night temperature 60.3°.

## FORCING STRAWBERRIES IN POTS.

 O time of the year is more appropriate than the present for discussing the merits of the numerous varieties of Strawberries employed for this purpose and the most economical system of preparing the plants for forcing. The subject has been ably advanced by Mr. Taylor. We have tried the various plans of preparing the plants, by severing them from the parent plant and establishing them in cold frames, also layering in small pots, and the one which has proved the most satisfactory is layering into the fruiting pots. It not only saves much time in potting, but a large amount of labour in watering. It is the most economical plan that can be adopted, and the plants are less liable to the attacks of red spider than when subject to the ordeal of drying two or three times a day, as is the case when layered in small pots.

Your correspondent, Mr. H. C. Ogle, appears to cling to the old system of growing Strawberries, and must have, if he forces a large number of plants, plenty of cold pits at his disposal, more in fact than the majority of gardeners are favoured with; while he recommends the plants to remain in cool pits the whole of the season, which is altogether unnecessary—indeed it is a disadvantage rather than otherwise. So long as the plants grow freely, form well-ripened crowns, and produce fruit of first-rate quality, we should say, Do not trouble with the cold-frame system. In few places—very few indeed—could cold pits be given to Strawberries from eight to ten months of the year or more. Besides, the pits can be more profitably employed for various plant-growing purposes throughout the summer, and be utilised for other valuable purposes in winter and spring. Experience teaches us, especially after a winter like the past, that the placing of Strawberries in frames for protection even in winter is not needed, except in the case of those required to be forced early. When started with heat and moisture they soon show activity and throw up their flower spikes better than when kept in a semi-active state through the winter.

Again, we do not agree with saucers of water placed underneath the Strawberry pots; these and squares of turf or, what we have seen employed, shallow boxes filled, or partially filled, with soil, are used at the expense of the flavour of the fruit. It has been difficult enough during the present Strawberry season to keep the air of the house sufficiently dry to give good flavour instead of having water from the saucers and boxes employed constantly evaporating to the fruit. Turf placed under the pot is also objectionable, and would by no means do where various batches have constantly to be removed to be brought forward faster or retarded, as the case may be. We have tried these systems in days gone by, and we obtain fruit as large and possessing a better flavour without them.

The varieties that have been named are good. Vicomtesse Héricart de Thury is the only variety that will do well outside here. Sir Joseph Paxton we prefer to Keens' Seedling, but there is very little difference; we think

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it travels better. President is a grand variety. What has Sir Charles Napier done to be left out of the list? Some undoubtedly will be ready to say, Because of the number of seeds that are so prominent on the flesh, which are so objectionable to the Strawberry-eater; its travelling properties outbalance this objection. It travels better when packed than any variety with which we are acquainted. Dr. Hogg is a fine-flavoured variety for late purposes, the fruit is large and ripens up to a good colour. Another Strawberry which should be grown in every garden is Underhill's Sir Harry. It is one of the most fruitful Strawberries in existence; it is shy in making runners, and it takes a long time to obtain a stock from a limited number of plants. It promises well outside here when, as before noticed, all others fail, with the exception of Vicomtesse Héricart de Thury. As a second Strawberry it is excellent, and has a splendid flavour and colour, and as an autumn and winter fruiter it has no equal. Its fertility at that season of the year is something wonderful; Vicomtesse has no chance with it for colour or size of fruit. It is by no means difficult to have fruit of it from 4 to 5 inches in circumference in December or January.

Strawberries outside are much later than usual this year, and the batch of Vicomtesse Héricart de Thury that fruited early in the season, if the necessary attention has been paid to hardening-off the plants carefully before placing them outside, will now be showing signs of their flower spikes, and will come in well when those outside are done. If the flower spikes are advancing too rapidly the plants must be placed in a north aspect. This batch will set and ripen well outside. The later batches will be more productive than this early one. The plants should be partially shaken out and repotted. This operation should be carried out through the whole stock that is intended for autumn and winter fruiting; they can also be planted out in prepared borders and lifted when the flower spikes commence showing towards the end of August. Those plants established in pots did the best with us last year; although if lifted early from the planted-out system they will do very satisfactorily.—WILLIAM BARDNEY.

## RUST AND BLOOM ON GRAPES.

RUST.—This is one of the greatest disfigurements which can affect Grapes. It may be known to every Grape-grower by the rough brown colour which marks and speckles the berries just about the time they are thinned. Some berries are nearly covered with it, like netting over the surface of a Melon, others are only spotted here and there; but in all cases it spoils the appearance of the berries. Many reasons for Grapes being rusted have been published from time to time; some right, no doubt, and others wrong. Draughts of cold air are said to produce it. I do not think so. Sulphur in the atmosphere, and rubbing or touching the berries with the head, are also said to favour its production, but I hardly credit this either. In my opinion the chief cause of rust on Grapes is carelessness in thinning. Anyone who has thinned Grapes will have observed that before one bunch has been finished the scissors have become

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quite damp, and if they are drawn through clean fingers or rubbed on clean paper they will leave a dirty black mark, and as there is nothing which will show dirt quicker than young Grapes I am quite satisfied that it is this which produces rust on Grapes. As Grapes are often thinned when the bunches are damp this increases the evil, and I would advise anyone who doubts this to be the cause of rust to try it on a bunch or two and see the result. To prevent rust those who thin Grapes cannot be too careful in keeping their scissors dry and clean, which can easily be done by wiping them frequently with a cloth kept at hand for the purpose.

**BLOOM.**—On all kinds of Grapes, more especially those well developed, a good coating of bloom on the berries always adds greatly to their appearance; in fact good bloom on Grapes may be considered the crowning point of perfect culture, as no bunch of Grapes can be considered perfect if the bloom is rubbed or deficient; and Grapes otherwise well grown, but wanting in this, seldom take high honours at shows or anywhere else: therefore all who aim at growing good Grapes must try and secure a perfect bloom on them. At some shows prizes are offered for the best bloomed Grapes, and the Black Alicante is generally the variety which secures this, as it carries more bloom than any other variety; then come Gros Colman, Lady Downe's, and the Black Hamburg. Muscat of Alexandria is generally more heavily coated than most other white varieties, but tarnished bloom is generally not so much observed on white as black Grapes.

Those who are in the habit of syringing their Vines heavily from the time the fruit is formed until it begins to colour never secure richly bloomed Grapes, as few operations blemish the bloom more than constant syringing. Rubbing the berries with the fingers when thinning or at any other time also spoils the bloom, and although it may not be noticed much when the berries are green, it is very easily seen when the fruit has coloured. When the bloom has been carefully preserved during the time the fruit was green it must be equally well taken care of after it is ripe, as then it is more easily tarnished than ever. It is very necessary to avoid touching the fruit with anything at all times. In thinning use a little forked stick to hold the bunch steady, but do not touch it with the hand. When anything has to be done to the shoots do it with the utmost care; and lastly, when the Grapes are ripe never entirely close the house when there is much moisture in the atmosphere, as it will settle on the berries and run down them, leaving them spotted, streaked, and worse looking than if they had no bloom at all.—A KITCHEN GARDENER.

#### CARNATIONS AND PICOTEEES.—No. 6.

**WORK FOR JULY.**—Remove all weeds from the surface of the soil in the pots. Tie up the flowering stems as fast as they grow, but not too tightly. For top-dressing employ a compost of equal parts of turfy loam, decomposed horse manure, and leaf soil. If the soil is light substitute cow dung instead of horse dung. Keep a good look-out for aphides, and destroy them at every opportunity. Should the weather become warm it is a good practice to syringe the plants in the morning, watering them in the evening when they require it. Water on the outside of the pots with the rose on the watering can, as it is very beneficial to the plants to maintain a moist atmosphere when the weather is hot and the ground dry.

Any plants which may be forward enough with their flowers if required for exhibition must be disbudded: the plan I adopt is to remove all buds for two or three joints below the leading or crown bud. Some few varieties at times do not require any disbudding, as they will only throw up perhaps one side bud in addition to the leading bloom; as for instance the varieties Mayor of Nottingham, P.F., and Sibyl, R.F. Stop any spindles which may form on the young growths by just pinching out the lead: in early situations these will frequently give a good layer. There are, however, a few varieties in which it is wise to allow one or two of the spindles to bear flowers, otherwise the whole of the growths will spindle. Bear in mind to disbud the spindle close, leaving only the crown bloom, which will generally extend the blooming period a fortnight to three weeks. When the flower buds are growing the plants and the bloom will be all the better for being occasionally supplied with weak liquid manure. The proportion in which it may be used is, say, one ounce of guano to the gallon of water for plants which are grown in strong soil; whilst those which are in light compost may have liquid manure prepared from sheep dung, new horse droppings, or cow dung, taking care not to

use it too strong—in fact it is better to give it weak and often.

When the buds are sufficiently advanced tie them to prevent them bursting. The best material I find for that purpose is unbleached strong linen thread well waxed with beeswax, of which I always carry a ball in my pocket at this time of the year. In tying use two knots, drawing the ends so that you can feel the first tie is firm round the bud, when the other tie may be made as tight as possible, using always a reefer's or weaver's knot. There are some varieties that require tying two or three times. Jenny Lind, C.B., frequently wants tying, owing to the buds being so liable to burst, when very young, more particularly when a large flower is wanted, as it is then disbudded harder than it would otherwise be if only wanted for an ordinary stage bloom.

It will be well to have all ready for carding the blooms if wanted for exhibition. The best place to obtain the cards is from Mr. George Meek, Crane Court, Fleet Street, London. The two sizes generally employed are  $3\frac{1}{4}$  and  $3\frac{1}{2}$  inches in diameter. In carding the bloom see that the hole of the card is large enough so that it does not press on the calyx; for this purpose the hole should be enlarged to five-eighths of an inch in diameter, and in some cases even larger, supporting the card with a circle of soft paper starred in the middle, which will be found quite sufficient to bear up the card. Those who have not yet been initiated into the science of dressing will do well to procure the tools for that purpose in readiness against the time they may be wanted. The instruments necessary are a pair of scissors, two pairs of tweezers, one steel for turning back the points of the calyx and removing any self or deformed petals, the other of fine ivory for laying out and placing the petals in position. In addition a small camel's-hair brush will be found useful for brushing off any dust which may accumulate on the flowers. The best tweezers can be procured from Mr. B. Simonite, Rough Bank, Sheffield, who will forward them by post in a case sufficiently large to hold a small brush as well.

**PLANTS IN BEDS.**—Always be on the look-out for slugs and caterpillars, which can soon destroy a plant. Another enemy is the black grub of the daddy longlegs; this, however, does not do much injury at this time if the soil is firm. Tie up the flower stems, disbud, and watch for green fly. In light soils if the weather proves dry it will be well to give a watering—not sprinkling—betwixt the rows, syringing the plants frequently in hot sunny weather. Stir frequently amongst the plants, and at the latter end of the month give a top-dressing of equal parts of turfy loam and decomposed horse dung.

**SEEDLINGS.**—These should be planted out as soon as the first pair of true leaves appear which follow the cotyledons, and not when the cotyledons appear as stated at page 404.

Should the plants at any time prove too close when planted in the boxes give them another shift. If the soil becomes caked stir it frequently, and if any soil is splashed up from heavy rains into the hearts of the plants brush it out with a small stiff brush. Look out for all kinds of vermin and remove them at once. Some seedlings come like a brush: it is a good plan when too many shoots or branches are formed to remove some of them, leaving not more than a couple. The sooner this is done the better. Those who intend wintering the plants in the open will do well to make the ground ready by digging it over deeply, mixing some well-decomposed manure in, and if the soil is light adding marl or road scrapings, or if heavy add some burnt refuse and leave it rough until wanted for planting out.—GEORGE RUDD.

#### AXWELL PARK GARDENS.

HAVING visited the gardens of Axwell Park, the seat of Sir Henry Clavering, Bart., about three weeks ago, and being shown through the houses, I was much struck by the magnificence of the Calceolarias grown in 8-inch pots, while several were in 6-inch pots. Some of the plants measured about 3 feet in diameter, and the flowers were very large and hid the foliage entirely. The plants were arranged with some good specimens of *Spiræa japonica*, scarlet *Pelargoniums*, *Azaleas*, &c. The stove plants also appeared remarkably well. The early vinery is a small structure which was planted with young Vines about two years ago. They are doing very well and bearing a fair crop, and the bunches are beginning to colour. The late vinery is a larger house, the Grapes had just been thinned, and there will be a good crop. The varieties were chiefly Black Hamburg and Muscat of Alexandria. In

the Peach houses the trees were bearing fine fruit and were very vigorous.

Gloxinias were handsome; they are grown in 6 and 8-inch pots, and were each bearing from eight to twelve large blooms. The flower garden has lately been laid out from a design suggested by Sir Henry Clavering, and when filled with bedding plants the beds will present a very gay appearance. The kitchen garden is about two acres in extent and walled in, and the different crops are in excellent condition. A great improvement in the walks is noticeable; they are edged with light-coloured stone, and appear clean and neat. Much credit is due to Mr. Cowan, the head gardener, who is a young man of great intelligence, industrious both in and out of doors, courteous to visitors, and I may say second to none in his profession in the north of England.—D. McLAREN.

### FRUIT PROSPECTS.

ONCE again are our hopes disappointed as regards the fruit crop. After a winter of almost unparalleled severity, followed by a very backward spring, we fondly hoped that what the weather and the birds had left for us would then have a chance of becoming developed; but not only is the fruit crop to a great extent destroyed (that we are unfortunately becoming accustomed to), but in my own case Peach trees are almost killed, and Pear trees away from the walls are very much injured, the growth being stunted, and much of it looks as if scorched; a few sorts only have a crop and appear uninjured, and as these must be harder in some respects than the others they are worth taking note of. They are Monarch, Louise Bonne of Jersey, Ne Plus Meuris, and Bellissime d'Hiver as pyramids; and Old Colmar on a west wall. Beurré Diel, Beurré Hardy, Fondante d'Automne, Joséphine de Malines, and Jargonelle as pyramids have a few fruit; and the same may be said of Duchesse d'Angoulême, Glou Morceau, Jargonelle, Joséphine de Malines, Jaminette, Napoleon, and Bergamotte Esperen on walls. Most other sorts have no fruit at all.

Plums are very clean and healthy, but are carrying barely half a crop, and there is no fruit on standards. Purple Gage, Late Rivers, and Kirke's only have a full crop, and these are on a west wall. In the same aspect Green Gage, Cooper's Large, and Imperial de Milan have about half a crop; while Jefferson, Golden Drop, and Guthrie's Late Green have very few fruit, and Ickworth Impératrice and Washington none at all. On an east wall Purple Gage is the only sort which reaches half a crop; White Magnum Bonum, Green Gage, and Golden Drop have less; Washington, Reine Claude de Bayay, Frogmore Late Golden, Blue Impératrice, and Ickworth Impératrice have none. Early Rivers on a south wall has a few fruits, and the same may be said of Early Favourite in a similar position as well as on a west wall. On a north wall the crop is perhaps the most regular, but it is also a very thin one. The sorts grown in this aspect are White Magnum Bonum, Victoria, Orleans, Blue Perdrigon, Coe's Late Red, and Prince of Wales, all of which have some fruit on. Golden Drop, however, in the same position has no fruit, and this sort, let me remark, which is generally one of the surest, is in every position remarkable this season for its want of fruit.

Dessert Cherries on walls are a moderate crop; on standards there are next to none, while Morellos are overcropped.

Of Apples it is too early to speak with certainty. The bloom has been abundant and beautiful beyond description; it was strong also and perfect to all appearance, but for some reason or other much of it is falling and leaving nothing behind it.

Currants are abundant, but will be undersized. Gooseberries are a fair crop and very good, but we have had plenty to do to keep them clear of the caterpillar. Probably not many of your readers have noticed what a difference there is in the flavour of different varieties of Gooseberries when used in the green state. I have not found any other kind yet so well flavoured as Warrington, but I dare not tell the cook of this. There is also a great difference in the varieties of Rhubarb, and the largest-growing sorts are not the sweetest.

Strawberries are blooming abundantly, but the flowers of Keens' Seedling and its allies are weak, owing doubtless to the leaves having been killed by the winter. Those sorts on which the leaves remained green are stronger and promise to do well; but whenever will they ripen? There is not even a Black Prince swelling up yet. When, too, shall we be able to layer runners for forcing? I am pulling the flowers off a portion of Vicomtesse Héricart de Thury to give the runners a better

chance, and I may perhaps thereby secure an autumn crop on the old plants.

Fig trees are evidently hardier than Pears, for where the wood was ripened there is an abundance of fruit showing; a few unripe shoots only are killed back.—WM. TAYLOR.

### THE NATIONAL ROSE SOCIETY'S SHOW, CRYSTAL PALACE.—JUNE 28TH.

THE great Rose Show of the year—a Show that has the support of a special Society for the production and encouragement of the queen of flowers—was held on Saturday last under the most disadvantageous circumstances possible, the season being one of the most backward and sunless on record. Not one real summer day can truly be said to have appeared during the month of June; a series of low temperatures, oftentimes accompanied with heavy soaking rains, hail, and thunder, have been continued down to the very day before the Show. Many earnest efforts were made to effect a postponement of the day in order that a greater number of growers might be able to take part in this national contest; but very few outside the pale of management know the difficulties that stand in the way of altering fixtures, however much it may benefit the exhibitors; and with large companies such as that of the Crystal Palace, whose arrangements are fixed and published months beforehand, it is simply impossible to alter dates. The executive would gladly have done so, but were unable; consequently, notwithstanding the paucity of Roses throughout the country, this Society was obliged to hold their annual southern Exhibition on the date originally fixed, and we confess we were not prepared to see as many Roses collected together as were there, especially when the five great Rose nurserymen—Messrs. Cant, Cranston, G. Paul, W. Paul and Turner, were unable to compete. The quality also, except in a few instances, was better than we could have expected for the most unpropitious season that they have endured. The great contest between the two champions (Mr. Baker, Exeter, and Mr. Jowitt, Hereford) was mutually arranged to take place at the next National Show in 1880.

We commence the schedule with Class 1, which is open to nurserymen only for seventy-two distinct varieties, the premier prize falling to a collection brought from "sunny Devon" by Messrs. Curtis, Sanford, & Co., Torquay; and very fine, even, and fresh the blooms were, consisting of Victor Verdier, Eugène Appert, La France, François Michelon, Homère, Jules Margottin, Charles Lawson, Marquise de Castellane, Marie Baumann, Comtesse de Serenyi, Cheshunt Hybrid, Général Jacqueminot (one of the brightest and most perfect Roses in the Show), Prince Camille de Rohan, Auguste Rigotard, Madame Charles Wood, Abbé Brammerel, Annie Laxton, Antoine Ducher, Moiré, Abel Carrière, Madame Lacharme, Sénateur Vaisse, Mdle. Bonnaire, Rubens, Ferdinand de Lesseps (very good), Elie Morel, Dupuy-Jamin, Mdle. Eugénie Verdier, Hippolyte Jamin, Marie Van Houtte, Xavier Olibo, Comte de Paris, Monsieur E. Y. Teas, Baronne de Rothschild, Madame Victor Verdier, Maréchal Niel, Duke of Edinburgh, Duchess of Edinburgh, Duc de Rohan, Marie Finger, Camille Bernardin, Devoniensis, Duchesse de Vallombrosa, Charles Lefebvre, Miss Hassard, Madame Thérèse Levat, Abel Grand, Exposition de Brie, Madame Trifle, Princess Beatrice, William Jesse, Peach Blossom, Magna Charta, Comtesse de Charbrillant, Souvenir de Malmaison, Baronne de Maynard, Monsieur Fillion, Lord Clyde, Madame Clémence Joigneaux, Horace Vernet, Lord Macaulay, Lamarque, Mabel Morrison, Marguerite Brassac, Madame Knorr, Madame Ferdinand Jamin, Narcisse, and La Rosière. Mr. Henry May, The Hope Nurseries, Bedale, Yorkshire, was awarded the second prize for a very even collection, but the majority of them were smaller in size than the first-prize collection.

For forty-eight varieties, distinct, three trusses of each, Messrs. Keynes & Co., Salisbury, were first with the following creditable collection:—John Hopper, Mdle. Eugénie Verdier, Camille Bernardin, Gloire de Dijon, Marie Guillot, Marie Baumann, Princess Charlotte de la Tremouille, Madame Victor Verdier, Dr. Andry (exquisite), Miss Hassard, Marguerite Brassac, Jules Margottin, Dupuy-Jamin (very fine), Devoniensis, Monsieur E. Y. Teas, Victor Verdier, Ferdinand de Lesseps, Maréchal Niel, La Rosière, Abel Grand, Cheshunt Hybrid, Madame Willermoz, Sénateur Vaisse, Madame Thérèse Levat, François Louvat, Clotilde Rolland, Horace Vernet, Tour Bertrand, Baronne de Bonstetten, Marie Van Houtte, Sir Garnet Wolseley, Madame Marie Verdier, John Fraser, Pitard, Souvenir de Malmaison, Barthelemy Joubert, Souvenir d'un Ami, Charles Lefebvre, Royal Standard, Duke of Edinburgh, La France, Exposition de Brie, Céline Forestier, Maurice Bernardin, Madame de Laboulaye, Fisher Holmes, and Boule de Neige. Mr. May was again placed second with a very fresh collection, but would have displayed them to a much greater advantage if he could have devoted more space to them. To cram seventy-two blooms in an ordinary twenty-four box does not show them off in the best possible manner; however, it is no easy task to cut such a quantity of blooms, which must have been grown entirely under glass, seeing that they came from Yorkshire.

In the class for thirty-six single trusses there were three competitors. Messrs. Kinmont & Kidd, Canterbury, Kent, were a good first with a splendid thirty-six, remarkable alike for size of bloom and brightness of colour. They comprised Edouard Morren, Gloire de Dijon, Sénateur Vaise, Princess Beatrice, Madame Victor Verdier, Baronne de Rothschild, Marquise de Castellane, Princess of Wales, Madame Fillion, Dr. Andry, Mdlle. Thérèse Levet, Antoine Ducher, Duchess of Edinburgh, Monsieur Gabriel Tournier, Annie Laxton, Belle Lyonnaise, Madame Emma All (splendid), Maréchal Valliant, Victor Verdier, Maréchal Niel, John Hopper, Abbé Brammer, Julie Touvais, Baron Haussmann, Marquise de Gibot, Marguerite Brassac, Cheshunt Hybrid, Marquise de Mortemart, Madame Lacharme, Felix Genero, Dupuy-Jamin, Duke of Edinburgh, Horace Vernet, Madame Victor Verdier, and Monsieur Noman. Mr. W. Corp, High Street, Oxford, obtained the second prize with a fresh collection, the flowers being smaller in size; and Mr. Piper, Uckfield, Sussex, was awarded the third prize.

For twenty-four distinct varieties, three trusses of each, there were again three competitors. Messrs. Curtis, Sanford, & Co. gained the first position with a very excellent collection, having amongst them particularly fine blooms of Mdlle. Eugénie Verdier, Victor Verdier, Princess Beatrice, and the "Old General." Messrs. Keynes & Co. occupied the second place, and Mr. May the third.

For twenty-four distinct single trusses Messrs. Kinmont & Kidd were deservedly awarded the first prize for undoubtedly the finest collection in the Show, and consisted of Annie Laxton, John Hopper, La France, Prince Camille de Rohan, Souvenir Arthur de Sazal, Baronne Haussmann, Duchesse de Vallombrosa, Etienne Levet, Duke of Edinburgh, Marquise de Mortemart, Camille Bernardin (very fine), Maréchal Niel, Antoine Ducher, Madame Emma All, Dupuy-Jamin, Henri Pages, Monsieur E. Y. Teas, Devonensis, Victor Verdier, Mdlle. Bonnaire, Louis Van Houtte, Marquise de Gibot, Duke of Wellington, and Madame Thérèse Levet. Mr. W. Corp was awarded the second prize for a highly creditable stand containing a good Maréchal Niel and several other Teas. Mr. W. Piper was third. Messrs. James Mitchell & Son, Piltown, Uckfield, Sussex, exhibited a good collection of twelve Teas or Noisettes, distinct, which gained the premier prize. Mr. W. Piper was awarded the second prize. Messrs. Mitchell & Sons' collection consisted of Duc de Magenta, Souvenir d'Elise Vardon, Devonensis, Maréchal Niel, Comte de Paris, Elise Sauvage, Moiré, Jean Pernet, Adam, Josephine Malton, and Comtesse Ouvartoff.

The amateurs' classes were fairly well filled except in some instances, the most remarkable being the entire absence of competition in the class for forty-eight varieties. Several meritorious collections were staged, which included generally good blooms. For thirty-six distinct single trusses five prizes were offered, and only three competitors appeared. Mr. John Hollingworth, Maidstone, secured the highest award with a collection of generally good and substantial blooms. The best were Beauty of Waltham (excellent), Maréchal Niel, Prince of Wales, Maurice Bernardin, Marie Baumann, Charles Lefebvre, Baronne Prevost, Belle Lyonnaise, Annie Laxton, Duke of Edinburgh, Souvenir d'un Ami (very fine), Victor Verdier, Camille Bernardin, Madame Willermoz, Comte de Paris, and Dupuy-Jamin. Mr. R. N. G. Baker, Heavitree, Devon, followed with some fine blooms, among which we noted Cheshunt Hybrid, Ferdinand de Lesseps, Xavier Olibo, Dupuy-Jamin, Annie Laxton, and Duke of Edinburgh. Mr. Joseph Davis, Wilton, Salisbury, secured the third prize with a collection of average merit, but Marquise de Castellane, Gloire de Bordeaux, and Triomphe de Rennes were well represented.

For twenty-four distinct single trusses the competition was a little more lively, eight collections being staged. The premier prize was deservedly awarded to Thomas Jowitt, Esq., Old Weir, Hereford, whose flowers were substantial and even; but the most conspicuous of all, and one that attracted general admiration, was a magnificent bloom of Niphetos. Many others were good, particularly Horace Vernet, Maréchal Niel, Cloth of Gold, Souvenir d'un Ami, Mr. Wilson Saunders, Exposition de Brie, Princess Mary of Cambridge, Devonensis, Miss Hassard, Ferdinand de Lesseps, Gloire de Dijon, and Prince Camille de Rohan. Mr. John Hollingworth was second, and exhibited several fresh and excellent blooms—notably Souvenir d'un Ami, Maréchal Niel, Marie Baumann, Victor Verdier, Jules Margottin, Duke of Edinburgh, and Charles Lefebvre. Mr. John Edwards, Stisted Rectory, was third with rather small flowers, but Sultan of Zanzibar and Horace Vernet were good. Mr. W. Harrington, gardener to E. Mitchell, Esq., Romford, Essex, was fourth, Mr. R. N. G. Baker fifth, and Mr. L. Stephenson, Redholme, sixth.

In the class for twelve distinct varieties, three trusses of each, there were four exhibitors. Mr. John Hollingworth securing the first place with a very fair collection, including Comte de Paris, Anna Alexieff, Exposition de Brie, Souvenir d'Elise Vardon, Marie Baumann, Cheshunt Hybrid, Charles Lawson, and Souvenir d'un Ami. The second prize was secured by Mr. Joseph Davis, blooms of the following varieties being well shown—Gloire de Dijon, Abel Grand, Dupuy-Jamin, Céline Forestier, Marie Baumann, Maréchal Niel, Cheshunt Hybrid, Charles Lefebvre, and Jules Margottin. Mr. Mayo, Corn Market, Oxford, was third. For twelve distinct single trusses there were five entries, but nothing

possessed of unusual merit was staged. The chief position was allotted to Mr. W. H. Wakeley, Rainham, Sittingbourne, Kent, whose collection included large blooms, but some were rather too full. The principal varieties were Charles Lefebvre, Miss Poole, Prince Camille de Rohan, Mons. Etienne Levet, Ferdinand de Lesseps, and Countess of Oxford. Mr. J. Bidout, gardener to B. Haywood, Esq., Woodhatch Lodge, Reigate, followed with Jules Margottin, Pierre Notting, Devonensis, Horace Vernet, Baronne de Rothschild, and others. E. Mawley, Esq., Lucknow House, Addiscombe, was third; and Mr. Alfred Evans, Marston, fourth.

In the class for nine distinct single trusses there were eight competitors for the five prizes offered. The Rev. H. Biron, Harbledown, Canterbury, was a good first, some of the blooms being excellent. The varieties were La France, Camille Bernardin, Souvenir d'un Ami, Xavier Olibo, Cheshunt Hybrid, Duke of Edinburgh, Dr. Andry, and Capitaine Christy. Mr. Killick, Wavering, Maidstone, was second, the best blooms in his stand being John Hopper, Horace Vernet, and Gloire de Dijon. Mr. Wakeley was an equal second with good examples of Jules Margottin, Pierre Notting, and Marquise de Castellane. The Rev. Alan Cheales, Brockham Vicarage, Surrey, was third; E. Mawley, Esq., fourth, and Mr. Evans fifth. Mr. Tranter, Upper Ascender, Henley-on-Thames, obtained the first prize for the only collection of six distinct single trusses, Camille Bernardin, Maréchal Niel, Edouard Morren, and Duchess of Edinburgh being well represented in his stand. In the class for six distinct single trusses of Roses grown in the suburbs there were four entries. Mrs. Lucy Denison, The Observatory, East Sheen, was awarded the first prize, which consisted of a piece of plate presented by Edward Mawley, Esq. This lady's collection included very fair specimens of Souvenir d'Elise, Gloire de Dijon, Glory of Waltham, Céline Forestier, and Charles Lawson. Mr. James Wight, Gipsy Hill, was second with poor flowers; and Mr. John Bateman, Highgate Road, third.

For twelve distinct Teas or Noisettes (single trusses) there was good competition, there being no less than ten entries. Mr. James Brown, gardener to A. J. Waterlow, Esq., Reigate, staged the premier collection, comprising excellent examples of Josephine Malton, Rubens, Gloire de Dijon, Jean Pernet, Marie Van Houtte, Devonensis, Cheshunt Hybrid, Alba Rosea, and Maréchal Niel. Mr. W. Harrington was second with fine specimens of Souvenir d'un Ami, Triomphe de Rennes, Madame Margottin, Marie Van Houtte, and Souvenir d'Elise. Mr. John Hollingworth was third, and Thomas Saville, Esq., fourth. There were six entries in the class for nine Tea or Noisette Roses, but the merits of the majority were not very high. The Rev. H. Biron had some good blooms in his first-prize collection, especially Souvenir d'un Ami, Caroline Knater, Rubens, Madame Willermoz, and Marie Van Houtte. Mrs. Green, Maidstone, was second with large flowers of Maréchal Niel, Belle Lyonnaise, Devonensis, and Comte de Paris, also very fine. Mr. Wakeley was third.

The number of exhibits in the open classes was very small, and in four only were prizes awarded. Messrs. Curtis, Sanford and Co., Devon Roseries, Torquay, obtained the second prize for the only stand of twelve single trusses of Abel Carrière, which were fairly good. There were eight entries for twelve single trusses of Maréchal Niel, the premier prize being secured by Mr. Joseph Davis with large and good blooms. Mr. W. Corp, Oxford, was a close second, and Messrs. Mitchell & Sons were third. For twelve single trusses of a Hybrid Perpetual Rose there were four entries. Messrs. Curtis obtained highest honours with John Hopper, the flowers of which were small, but fresh and bright. Mr. Baker was next in order with Prince Camille de Rohan, neat and good blooms. Mr. J. W. Piper, nurseryman, Uckfield, was third with Souvenir de Charles Montault.

In the class for twelve Teas or Noisettes not named in the schedule Mr. W. Farren, Cambridge, was awarded the first prize for an exquisite stand of Souvenir d'un Ami. Mr. G. Prince, Oxford, won the second place with the same variety; and Mr. James Brown was placed equal third with Mr. Baker, Mr. Brown exhibiting Belle Lyonnaise, and Mr. Baker Cheshunt Hybrid. There were also several other creditable collections staged in this class, but the first-prize stand contained a very fine twelve—large in size, perfect in shape and colour, and all remarkably even.

Several miscellaneous exhibits were staged, including cut Roses, Pelargoniums, Pyrethrums, &c. From Mr. Mayo came five stands of various Roses. Mr. A. Evans sent a collection of blooms, also Mr. John Matlock and Messrs. Mitchell & Sons. Mr. W. Farren, How House, Cambridge, exhibited a box full of bunches of a little white Rose named Fairy Queen. Mr. Corp of Oxford sent an extensive collection of various Roses. Mr. Ware, Hale Farm Nurseries, had collections of Pyrethrums; Mr. Hooper, Bath, Pansies, Pyrethrums, and Ranunculuses; Mr. Boller a collection of miniature Cacti; and Mr. Cannell, Swanley, Kent, several boxes of Pelargoniums, representing Regal, Show, and Fancy varieties, and double and single Zonals. A handsome group of Tuberous Begonias and foliage plants was arranged by Messrs. Laing & Co., and an artistic rockery and fountain were exhibited by Messrs. Dick Radclyffe and Co., Holborn.



In the afternoon their Royal Highnesses the Duke and Duchess of Connaught and the Duchess of Edinburgh honoured the Exhibition by their presence. The illustrious visitors inspected the boxes of Roses attended by Canon Hole, and the Duchess of Connaught accepted a copy of the President's "Book about Roses," a handsome specimen of *Maréchal Niel* Rose from the Rev. H. D'Ombraim, and an illuminated copy of the Society's Report (specially prepared for the occasion), from Mr. E. Mawley. The weather was extremely fine, and during the whole of the day the paths between the long tables on which the Roses were arranged were crowded by thousands of aristocratic visitors, who had assembled to welcome the Royal couple. The Exhibition was undoubtedly a great financial success, however unsatisfactory it might appear from a rosarian's point of view.

## EUCALYPTI AND TREE FERNS IN SCOTLAND.

I HAVE read with much interest the reports given in the *Journal of Horticulture* of the effects on vegetation of last winter's severe and long-continued cold. As I do not see mention of any place in Scotland where *Eucalyptus globulus* has survived, I write to mention that in the island of Arran on the Frith of Clyde there are several trees untouched, two at Brodick, the larger being about 30 feet in height, and one at Corrie in the same island. The larger tree at Brodick grows in a wood; it was raised by me in 1872, and given, when a year old, to James Paterson, Esq., factor to His Grace the Duke of Hamilton, by whom it was planted where mentioned. It would have been much higher had it not two years ago during a storm lost its top and 12 feet of stem.

Alongside it are two other species, the seeds of which were sold to me as *E. pendula*. I suspect that one of them is *E. amygdalina*, the two differ in the leaves, the one being sessile and opposite, those of the other alternate and having a short stalk. They are also somewhat different in appearance; both agree to the name they bear in being weeping in habit.

At Cromla Gardens, Corrie, the fine Australian Tree Fern, *Dicksonia antarctica*, has stood without protection for twelve years, and it has now a stem 22 inches in girth and 14 inches in height. It is uninjured by last winter, and is now sending up ten new fronds in addition to about twenty previously existing. Last summer I planted in the same garden two other Tree Ferns, *Dicksonia squarrosa* and *Cyathea medullaris*. The former had no protection and is uninjured; the latter was covered around its stem and above its crown with leaves, yet all its fronds with the exception of one were destroyed, but the crown was uninjured, and now it is shooting vigorously. Both the plants were kindly given to me for this experiment by Mr. Gray, gardener, Newfield, Ayrshire, who had received them from a son in Christchurch, Canterbury, New Zealand.—DAVID LANDBOROUGH.

## RICHMOND HORTICULTURAL SOCIETY'S SHOW.

JUNE 26TH.

THE weather was extremely unfavourable to the success of this Exhibition, particularly in the earlier part of the day when the rain had rendered the somewhat low land of the Old Deer Park a veritable swamp. Later on, however, the sun struggled through the heavy masses of clouds and considerably improved the aspect of affairs, for taking advantage of the finer weather great numbers of people flocked in, and when H.S.H. the Duke of Teck and H.R.H. Princess Mary arrived there were plenty to give them a hearty welcome.

The exhibits, which were very numerous and some of especial excellence, occupied five tents, the two largest containing the cut flowers, dinner-table decorations, and chief classes devoted to plants; in another were arranged the groups of plants, in a fourth were the fruit and vegetables, while a small one contained the cottagers' productions.

**STOVE AND GREENHOUSE PLANTS.**—These were shown in very good condition, three fine collections of nine each being staged. The first prize was secured by Mr. Child, gardener to Mrs. Torr, Garbrand Hall, Ewell, who exhibited very even and beautiful specimens of *Gleichenia Mendeli*, *Todea superba*, *Clerodendron Balfourianum*, *Erica Cavendishiana*, *Aphelexis macrantha* purpurea, and an unique *Cypripedium Stonei* bearing two dozen superb flowers. Messrs. Jackson & Son followed also with fine plants, *Erica depressa* being in beautiful condition, and *Pimelea mirabilis* very fair. Messrs. Peed & Son, Lower Streatham, were third, their collection including an extraordinary large *Pimelea mirabilis* over 5 feet in diameter and profusely flowered. In the open class for six the first prize was awarded to Mr. Hinnell, gardener to H. Davis, Esq., Anglesea House, Surbiton, two of his plants being very striking; *Erica tricolor dumosa* was simply exquisite, so even, healthy, and abundantly flowered that it could scarcely

be surpassed. *Phenocoma prolifera Barnesi* was remarkable on account of its vigour and the well-coloured flowers. In the other class for six, which was confined to persons residing within the Society's district, Mr. Crafter, gardener to the Rev. W. Finch, Kingston Hill, received the first prize for fair plants. He was followed by Mr. Atrill, gardener to J. Freahe, Esq., Bank Grove, Ham.

**PERLARGONIUMS.**—The competition was not very brisk in the classes for these plants, but Mr. James, gardener to W. Watson, Esq., Redlee, Isleworth, exhibited some fine specimens. He obtained the premier award in the open class for six Show varieties with even and well-flowered plants, the blooms large and well formed; the best were Prince Leopold, Princess of Denmark, Archduchess, Mary Hoyle, and Snowflake. Mr. Wells, gardener to C. W. Selwyn, Esq., Selwyn Court, Richmond, was placed third. In the corresponding district class Mr. James was the only exhibitor, and again received the first prize; but his plants were not so good as in the previous collection. The same exhibitor staged the best specimens of six Fancy varieties; Fanny Gair, East Lynne, and Mirella were very fine. Zonal varieties were not remarkable, except perhaps the first-prize collection of six from Mr. Morrell, gardener to S. Rutter, Esq., The Cedars, Richmond, which included some profusely flowered plants. For six silver-foliaged varieties Mr. Tipping, Richmond, was first with small but fine plants, Lass o' Gowrie being very brightly coloured. Mr. Sallows was second, and Mr. Wells third. Mr. Tipping was also first with six golden-leaved varieties.

**FUCHSIAS** were fairly well represented. Mr. Morrell's premier collection of nine specimens were well grown and the flowers were numerous. Mr. Wells was next in order of merit, and his plants were rather deficient in bloom. Mr. Coles, gardener to W. Wigram, Esq., Twickenham, staged the best six varieties, and was followed by Mr. Morrell and Mr. Atrill, whose plants were irregular and untrained.

**FERNS** were numerous, well grown, and vigorous. In the class for eight exotic species or varieties Mr. J. Hudson, gardener to H. J. Atkinson, Esq., Gunnersbury House, Acton, was awarded the chief prize. The most noticeable specimens in his collection were a large *Dicksonia antarctica*, a good *Davallia Mooreana*, and a beautiful *Adiantum farleyense*. Mr. East, gardener to T. Wigan, Esq., East Sheen, obtained the second place with good plants, especially *Cyathea dealbata*. Mr. Wells was third. In the corresponding district class Mr. Atrill gained the first prize with fine plants, a specimen of *Davallia pyxidata* being remarkable for size and vigour. Mr. Morrell was second with very even plants. Hardy Ferns were very fresh and pretty. Mr. James's group of twelve varieties in particular; and Mr. Morrell's plants were well worthy of the second prize which he received.

One class was appropriated to fine-foliage plants, but confined to exhibitors from the Society's district. Very good specimens were staged, the colouring in the *Crotons* being unusually rich. The first prize was awarded to Mr. Bates, gardener, Poulett Lodge, Twickenham, for a collection including *Croton Johannis*, *C. undulatus*, *Cocos Weddelliana*, and *Areca Baueri*, all very handsome but of medium size. Mr. Prickett, gardener to D. Francis, Esq., Richmond, was a good second, and Mr. Brown, St. Mary's Grove Nursery, was placed third. *Begonias* were in good form, and Mr. Morrell's six gained the premier award, Mr. East following with vigorous plants; the remaining prize was taken by Mr. Sallows, gardener to J. Flaek, Esq., Twickenham. For six *Coleuses* there were six entries, but with the exception of Mr. Sallows's collection (first) and Mr. Atrill's (second) plants the colour was very indifferent and the specimens irregular. *Caladiums* were much finer than usual, and the exhibits were pretty even in merit. Mr. East and Mr. Morrell received the first and second awards respectively.

**Orchids** were only represented by three collections in the class for six specimens. Mr. James secured the chief position with fair plants. Messrs. Jackson & Son were next, and Mr. Child third, nothing extraordinary being staged.

**CUT FLOWERS.**—In the marquee devoted to table decorations and cut flowers there was a good display of *epergues* and vases on a long table, but the *Roses* and miscellaneous flowers were scarce, particularly the former, which were also very poor in quality, and do not demand especial notice. There were over twenty exhibitors in the classes for decorated *epergues*, &c., and many were very tasteful and elegant arrangements. The special prize of a silver medal offered by the Duke of Teck for the prettiest arrangement of three vases was awarded to Mrs. Chancellor, The Retreat, Richmond. Messrs. Veitch & Sons sent eight boxes of *Rhododendron* blooms, very fine and good varieties.

**GROUPS.**—Over ten competitors arranged their plants in the large marquee, and several of the groups were extremely beautiful. In the class for a large group not to exceed 100 square feet Mr. Hudson was a long way before the other exhibitors with a most tasteful design that attracted general admiration. The groundwork was somewhat flat, but otherwise excellent, and was composed of *Gloxinias*, *Adiantums* and *Caladium argyrites* intermixed producing a charming effect; over them hung graceful Palms, which imparted a lightness and elegance simply ex-

quisite. Messrs. Hooper & Co., Covent Garden, were placed second with a good group, and were closely followed by Messrs. Osborn and Sons, Fulham; an extra prize was secured by Mr. Brown, nurseryman, Richmond. Several other noteworthy groups were there, especially that for which Mr. Bates obtained the special prize offered by C. Turner White, Esq., of Kew. In this *Coccos Weddelliana*, Palms, and *Adiantums* played a prominent part, the edging being formed of *Isolepis gracilis* and *Selaginella Kraussiana*. Mr. Kinghorn, Sheen Nurseries, also contributed a large and handsome collection of plants. In the other tents Messrs. Veitch, Wells, Osborn, and Laing exhibited some very beautiful groups, for which silver and bronze medals were awarded. Mr. Boller also staged a group of succulents.

The competitors for the extra prizes were very numerous. We are unable to notice them individually, for over forty ladies and gentlemen offered prizes and the majority three each. The plants were far above the average degree of excellence, especially the *Dracenas* and Palms.

**FRUIT.**—This was shown in quantity, and the quality was also good, particularly among the Grapes. For a collection of four dishes Mr. Fry, gardener to S. Baker, Esq., Haydon Hall, was first with well-ripened Brown Turkey Figs, small but well finished Foster's Seedling Grapes, a handsome Queen Pine, and a fair Hero of Bath Melon. Mr. Hopper, gardener to C. O. Ledwood, Esq., The Elms, Acton, followed with small but well-ripened fruit. Mr. Masters was third, the Grapes and Strawberries being scarcely ripe. Mr. Wagstaff, gardener to H. Elam, Esq., Isleworth, secured the premier prize for a dish of black Grapes with good examples of Black Hamburg. Mr. Hoyle, The Cedars, Lee, Kent, and Mr. Child followed in the order mentioned with the same variety. Mr. Wagstaff was again first with three bunches of white Grapes, Muscat of Alexandria, large berries and fine bunch, but not fairly ripe. In the district classes Mr. Wagstaff and Mr. Bates carried off the principal prizes for Grapes and Pines with very good fruits. Melons and Strawberries were very poor. Messrs. Suttons' prize for a collection of Melons and Cucumbers was awarded to Mr. James.

Vegetables were not very numerous but of good quality, Messrs. Crafter and Wagstaff being the principal exhibitors. The cottagers' productions were contained in a small tent, and some were of average merit; the window boxes were certainly good.

Notwithstanding the unpropitious weather the Show was very successful, and was in all respects one of the best ever held by the Society.

#### ARTIFICIALLY NETTED VICTORY MELON VERSUS VICTORY OF BATH.

I NOTICE in your report of the Fruit Committee held at South Kensington on June 24th, that I exhibited a Melon named Netted Victory, which proved to be "Victory of Bath artificially netted by scratching the skin with a sharp-pointed instrument when the fruit is young." I feel the Committee or your reporter has done me a cruel injustice for printing such an assertion, and I hope you will give me space to explain the matter fully and fairly.

First, I have not this season grown Victory of Bath, and this I can prove by my young men who have had the charge of our Melons; and secondly, Victory of Bath is a green-fleshed, and Netted Victory a white-fleshed variety. The identical Melon shown at the meeting I authorised Mr. Barron to present to Messrs. James Veitch & Sons, and doubtless they will tell you it was a white-fleshed variety. I may also add when Messrs. Carter & Co. advertised Dell's Hybrid last season they mentioned that it was the only green-fleshed Melon certificated in 1878. I wrote to these gentlemen and asked for an explanation, telling them I had also received a certificate. They answered my letter, telling me mine was not a green but a white-fleshed variety, and this was the first time I had heard that we had three classes in Melons, thus showing to all intents and purposes I have been wrongly and cruelly reported.

In conclusion, and with reference to netting Melons, I may say we here make a practice of doing it, and hold that Melons netted have a more ornamental appearance at the dessert table. As gardeners we try to please the eye as well as the palate, and let us hope we succeed.—R. GILBERT, *Burghley Gardens*.

[The report referred to was a simple record, without comment, of the unanimous decision of the Fruit Committee. We are informed that the Committee were requested not to cut the fruit, so it is obvious they could not observe the colour of the flesh. The real question of import is the artificial netting process. Mr. Gilbert does not deny having scratched the fruit, and we trust he will be able to state that he informed Mr. Barron and Messrs. Veitch, to whom he alludes, that the netting was not natural. When the "netted" Victory was certificated on July 3rd, 1878, we think the Committee were not aware that

its marked characteristic—netting (which enhances considerably the value of an otherwise good Melon)—had been produced by artificial means. In our report of that meeting the Melon was described as coarsely and "peculiarly" netted, yet Mr. Gilbert did not hasten to explain the matter "fully and fairly." The Melon was then described as a green flesh (and appears to have been so considered by the raiser, or why his communication to Messrs. Carter & Co.?) and the public would probably consider it a netted form of Victory of Bath, the one fault of that good Melon being its general absence of netting.]

#### LEEDS HORTICULTURAL SOCIETY'S SHOW.

JUNE 25TH, 26TH, AND 27TH.

DIFFICULTIES of various kinds have been encountered by the directorate of this Society, and many of them have been surmounted; but an impediment much too familiar, and which can neither be foreseen nor combatted, is a wet day. The first day of the Show now under notice was a pleasant one—dry and with a refreshing breeze blowing across Woodhouse Moor, on the margin of which the Horticultural Gardens are situated; visitors to the Exhibition were consequently numerous, the tents and gardens being crowded, and quite a throng of townspeople congregated at the entrance to admire and criticise the dresses as the ladies passed from their carriages to the gardens. Although the evening was fine and weather prospects fairly bright, yet there were gloomy forebodings that the next day would be wet—nor because of any gathering of clouds, for the sky was clear, nor of any shifting of the wind, for it appeared settled, nor of any barometrical changes, for these were not adverse, but solely because a settled conviction prevails in the public mind at Leeds that it must rain at the flower show. This "fixed idea" was reflected in one of the local journals, which commenced its report—"The Leeds Flower Show and a fine day!" referring, of course, to the opening day of the Exhibition. But the second day, as predicted without any philosophical reason, was unmistakably wet. This was unfortunate both for the public of Leeds and the Exhibition Committee, for vast numbers must necessarily have been unable to visit an excellent Exhibition, and the receipts must have suffered in consequence, the second being usually designated the "money-taking day." Yet it does not always rain at Leeds Show, for last year the weather was fine, and we trust that many fine show weeks and fine shows will be enjoyed in the future by the inhabitants of this populous district.

The Exhibition we have now to notice was of considerable magnitude and of a high average order of merit. In its arrangement also the Show was peculiarly enjoyable. Instead of a number of small tents and narrow passages a wide and lofty marquee 800 feet in length contained the specimen plants and groups: two other tents in connection with this containing—one chiefly Pelargoniums and Roses, the other fruit and cut flowers. In the large marquee the plants were arranged down the centre, except a marginal row next the canvas, and thus a wide promenade was afforded upwards of 200 yards in length in this tent alone. In the other tents, too, ample space was afforded for the visitors. In the centre of the chief tent a large stage of circular outline contained the specimen stove and greenhouse plants of Mrs. Cole and Son, J. F. G. Williams, Esq. (gardener, Mr. Tudgey), in competition for the principal prize. The plants were substantially the same as those exhibited at York and enumerated in our report of that Show. After a critical examination of upwards of half an hour's duration the Judges could arrive at no other decision, doing justice to both exhibitors, than to award them equal first prizes. Mr. Tudgey's plants were generally the larger and Mrs. Cole's the fresher of the two collections. From the centre to one end of the tent were arranged the specimen plants in other classes—Ferns, fine-foliage and flowering plants, agreeably associated, and arranged on the grass. The corresponding end contained the groups arranged for effect. These constituted the chief feature of the Exhibition and demand primary attention.

Last year there was only one class (open), for groups arranged for effect; and local exhibitors competed so well but unsuccessfully, that it was intimated in this Journal that they merited a class to themselves. A change in the arrangement of the groups was also suggested, so that each collection could stand out with more distinctness. This year the open class was retained, the plants not to occupy space exceeding 800 square feet; an additional class being provided for amateurs residing in the county of York, the plants not to occupy space exceeding 150 square feet. The first prize in the last-named class consisting of a silver cup, value ten guineas, given by the Mayor of Leeds. In the open class two groups were arranged, and in the amateurs' class four. They were disposed down the centre of the tent, the base of each being circular and about 15 feet in diameter, the plants being arranged more or less in the form of cones about 10 feet high. With ample space between each two groups the effect of the six exhibits was highly imposing. The whole of the Judges were summoned to adjudicate in these classes, and it is questionable if

ever Judges had a harder "nut to crack" at any horticultural exhibition than in awarding the prizes in this competition. Every arrangement possessed points of merit, and every one of them also had defects; and so closely the one counterbalanced the other throughout, that it was only after long and close examination and discussion that the verdict was given, and not in one case was it given unanimously. In the open class the votes were equal for Mr. Tudgey and Mrs. Cole, and it was only by the Committee appointing a referee, who received the approval of every Judge, that the difficulty was solved, and the prizes were awarded to the two great exhibitors in the order named. Mr. Tudgey's group was composed of valuable plants (which in itself is no recommendation in a class of this kind), and they were arranged with some freedom, yet the effect produced was somewhat heavy; but the admitted desideratum that the pots be hidden was as nearly as possible attained, for not one pot or tub was obtrusive. The second-prize group was generally more light and elegant, but on one side, and that, moreover, facing the entrance to the tent, several large pots on which plants were standing, and also the pots containing the plants were very conspicuous, and this blemish, which must have occurred by an oversight of the decorator, proved a fatal one. The groups were composed of Palms, Cycads, and Crotons, brightened with a few Crotons, &c., and flowering plants.

In the amateurs' groups the competition was extremely close, so close that every collection was nominated by some one of the Judges as worthy of the premier position; eventually, however, the cup was awarded to Mr. W. Sunley, gardener to J. Kitson, Esq., Spring Bank, Leeds. This group was the most formal of all, and was composed of the least expensive plants; but with its formality, its fault, it was the only collection in which the pots were not considerably exposed, and the only one also where flowers were sufficiently interspersed with Ferns, &c. Except the elegant terminal plant *Cocos Weddelliana*, a *Stephanotis*, and one or two variegated *Yuccas*, the plants were such as are usually employed in conservatory decoration—*Spiraeas* (*Hoteias*) *Hydrangeas*, *Roses*, *Begonias*, small *Ericas*, *Coleuses*, *Pelargoniums*, and *Fuchsias*, relieved with Ferns and enriched with a few *Crotons* and *Dracenas*, the margin being composed chiefly of *Gloxinias* and small Ferns. The plants were too closely packed, and the surface of the cone was too smooth, yet the effect was imposing, and on the whole the group, while acknowledged as faulty, was yet considered to possess fewer defects than the others, and hence was awarded the coveted prize. Mr. Hemming, gardener to Henry Oxley, Esq., Westwood, was placed second with a fine, free, ornamental, and bright arrangement. The central plant was a fine specimen of *Aralia dactylifolia* surrounded with *Yucca aloifolia* variegata, *Cordylines australis*, *Pandanus Veitchii*, and a good *Cycas*; in front of these were Palms placed between such plants as *Kalosanthes*, *Clerodendron Balfourianum*, *Statice profusa*, and well-flowered *Fuchsias*; the margin being composed of smaller plants of Ferns, *Dracenas*, *Cypripediums*, *Crotons*, and *Deutzias*. The fault of the group was that the pot of the central plant were too conspicuous, and the flowering plants being half-specimens, rendered the arrangement somewhat "lumpy." The merit of the arrangement consisted in the good balancing of flowering and foliage plants. Third honours fell to John Harrison, Esq., St. John's Grove, Leeds. This was the most artistic arrangement of all, so far as the plants permitted—that is, all the other groups might have been improved by a different placing of the plants in them, but this was unimprovable except by additional plants. The great fault of the group, however, was the obtrusiveness of the tub containing the terminal plant, a good-sized specimen of *Chamærops Fortunei*, which gave to the arrangement a top-heavy appearance. The merit of the group was the free and artistic manner in which the plants—small Tree Ferns, *Cordylines* and cut-leaved Japanese Maples very elegant, and *Aralia Sieboldi* variegata—were disposed. The marginal plants were Ferns, *Isolepis gracilis*, *Bouvardias*, *Pelargoniums*, *Saxifraga pyramidalis*, *Hydrangeas*, and *Coleuses*. More flowers were wanted, and if Mr. Harrison had bought a few ordinary window plants from the market the day previously (which according to the rules he was quite entitled to have done) and brightened the groups with them, and at the same time hidden the central tub, he would in all probability have secured the Mayor's cup. A fourth prize (extra) was worthily granted to Mr. Frankland, gardener to John Barron, Esq., M.P., Chapel Allerton Hall, for a very good arrangement of well-grown plants; indeed, many of them being half-specimens were not amenable to artistic grouping. The exhibitor was further handicapped by not having a central terminal plant, the pole of the tent occupying that honoured position, and as may be imagined, not picturesquely. The lessons derivable from the groups are that formal specimen plants of value, and which afford evidence of good culture and training, are not so suitable for the purpose in question as commoner flowering plants of lesser intrinsic value for associating with the Ferns, &c.; and that plants of such character as *Dracenas*, *Yuccas*, *Cordylines*, and slender Palms should be brought boldly forward near the margin, and even elevated if needed to show their individuality and to break up the conventional even surface that prevails in plant-grouping. Such plants, too, as *Selaginellas*, *Panicum variegatum*, *Isolepis gracilis*,

and even the common Moneywort or Loosestrife (*Lysimachia Nummularia*) would be found of great value in "finishing off" the groups. Yet with the faults noticed (and no harm can be done by naming them, but on the contrary good may ensue) it is questionable if a better exhibition of the kind has ever been seen at any provincial show. The Show Committee will do well to continue the classes, adding others, if possible, for smaller groups for another section of exhibitors, for it is obvious that where there is one cultivator who can stage in the specimen classes there are ten able to compete in groups of this nature.

Having referred somewhat lengthily to what was the most important feature of the Show, and moreover a system of exhibiting that appears to be growing rather rapidly, the other sections of the Exhibition must be disposed of more briefly.

In the stove and greenhouse plant classes not named above some highly creditable specimens were staged. In the class for six plants Mr. Frankland secured first honours with a *Clerodendron*, *Anthurium*, *Phenocoma*, *Bougainvillea*, *Stephanotis*, all very good, and a moderate *Erica*. Mr. Tudgey was second, and Mr. Tuke, gardener to G. Gelder, Esq., Cliffe View House, Headingley, third; *Ixora floribunda nana* and *Dipladenia Brearleyana* being much admired. In the class for three plants Mr. Tudgey won first honours with medium-sized specimens, *Erica Cavendishiana* was splendid, *E. mutabilis* excellent, and *Clerodendron Balfourianum* very good. Mr. Wm. Sunley was placed second, his noticeable plant being a remarkably fine example of *Stephanotis* (one of the finest plants in the Show), and Mr. Frankland third.

Ornamental-foliaged plants were very fresh and good. In the class for six plants Mrs. Cole & Son secured the first position with fine examples of *Thrinax elegans*, *Kentia Fosteriana*, *Cycas revoluta*, *Cocos Weddelliana*, *Croton Weismanni*, and *C. Diarceli*. Mr. Winterbourne, gardener to T. Simpson, Esq., Westwood, was second, his best specimens being *Areca sapida*, *Latania borbonica*, *Encopalartus villosus*, and *Dasyllirion glaucum*. Mr. Tuke was a good third, *Cycas circinalis* being very fresh, and *Yucca aloifolia* variegata excellent.

Ferns were both numerous and superior. Mrs. Cole & Son were first for six plants including immense *Gleichenias*, but somewhat worn; Mr. Tudgey second with smaller and much fresher specimens; and Mr. West, gardener to S. Smith, Esq., Headingley, third; *Cyathea Smithii* and fine examples of *Polystichum coriaceum* and *Goniophlebium subauriculatum* being noticeable. An extra prize was worthily awarded to Mr. Eastwood, gardener to F. W. Tetley, Esq., Westwood, his plant of *Cibotium Schiedei* having a spread of upwards of 16 feet. In the class for three plants the prizes went to Messrs. Winterbourne, Wright, and Tudgey in the order named, all exhibiting well. Mr. Rylance, Aughton Nurseries, Ormskirk, was far ahead of others with twelve hardy Ferns, and secured the first prize with excellent specimens; Mr. Goodchild, gardener to Mrs. Naylor, Potternorton, following with creditable examples.

**PELARGONIUMS.**—These as arranged on low stages round the sides of the tent devoted to them had a rich effect, the specimens affording evidence that there are skilful cultivators in the north, the plants being of good form and mostly good in foliage and blooms. The open class for twelve show varieties was a fine one, the prizes being awarded to Mr. H. May, Messrs. Lazenby and Sons, and Mr. Rylance respectively. In the amateurs' class for six plants, the prize plants, and excellent they were, came from the gardens of W. L. Joy, F. W. Tetley, and T. Simpson, Esqrs. Mr. Tetley's gardener was also first for Fancies, followed by Mr. Rylance and Messrs. Lazenby & Sons, all staging admirably; and *Zonals* were splendidly exhibited by Mr. Joy's gardener (Mr. G. Winterbourne), his brother (Mr. T. Simpson's gardener) and Mr. Hemming. As the names of the best varieties in the *Pelargonium* classes at the York Show were given in our report last week it is not necessary to repeat them here, as they were much the same at both exhibitions.

Orchids, which were staged in much larger numbers and also in better condition than last year, occupied the whole of one side of the fruit tent. In the open class for six plants Mr. Mitchell, gardener to Dr. Ainsworth, Manchester, won first honours with *Cattleya Mendeli*, nine flowers; *Odontoglossum crispum*, five fine spikes; *Cypripedium Parishii*, nine fine spikes, most of them with three flowers; *C. barbatum*; and *Saccolabium præmorsum*, with five pendulous spikes; and *Thunia Bensonæ*. Mr. Sunley was an excellent second, closely followed by Mr. Rolliison, gardener to Walter Bateman, Esq., both exhibitors staging very creditable collections. In the class for three plants Mr. Mitchell was again in the foremost position with a splendid example of *Aërides maculosum* Schrederi with five spikes, four of them much branched, of large and richly coloured flowers, the plant very healthy and vigorous; *Cattleya Mossii* and *Dendrobium crassinode* completed the trio. Mr. Sunley was second, and Mr. West third; some of the *Oncidiums* being tied much too closely, quite spoiling their appearance. In the single specimen class Mr. Mitchell was once more in the ascendant with *Phalaenopsis grandiflora aurea* with twenty-four fine flowers; Mr. Hemming, gardener to H. Oxley, Esq., being an excellent second with a splendid example of *Cypripedium barbatum* with about sixty flowers; and Mr. H. Wright,

gardener to G. Talbot, Esq., third with *Stanhopea tigrina* with two vigorous spikes and three grand flowers expanded.

Azaleas were not noticeable. *Calceolarias* fairly good, Tuberous *Begonias* comparatively poor, *Fuchsias* creditable, but not superior, yet as arranged down the centre of the fruit tent had an elegant appearance; *Gloxinias* very good from Mr. Sunley and Mr. Backhouse, gardener to Dr. Gott, Woodale House, Leeds; and *Lilium auratum* very small.

Roses in pots were tolerably numerous and several of them very good. In the open class for twelve plants Mr. H. May was placed first with large but too closely tied specimens; Mr. Pybus, Manokton Moor, Ripon, an excellent second with smaller plants, but having better foliage and blooms; and Mr. Eastwood third with dwarf fresh specimens. In the amateurs' class for six plants Mr. H. Wright was, we presume by mistake, placed first, the second-prize plants from Mr. Eastwood being decidedly superior both in habit, blooms, and foliage; Mr. Christopher Dalton, Ripon, had the third honour. The other classes do not call for notice.

Of bedding plants we never saw better collections staged than those of Mr. Andrew Simpson, Heworth Nurseries, York, and Mr. R. Simpson, New Lane, Selby, who were awarded the prizes in the order named. The plants, which were in pans, were fine masses upwards of 2 feet in diameter, very fresh and bright, especially *Oenothera Baueriana* variegata, *Ophiophogon spicatum* aureum, *Coloas* Garnet, *Abutilon Darwinii* tessellatum, *Lobelia pumila* magnifica, *Verbenas* in variety, *Ageratum* Cupid dwarf and good, and succulents. These formed quite a pretty line along the side of the tent.

Cut flowers were generally good, a few particularly so; but the fixture was too early for Roses which, as exhibited by Messrs. Osmaston and Paul, Mr. Soames and others, were such a fine feature of the Show last year. This year several boxes were staged; the blooms having mostly been cut from under glass, and although good in their way do not call for a detailed notice. Stove and greenhouse cut flowers were admirably exhibited by Messrs. Cole, Sunley, and Lettis. Fine trusses of *Zonal Pelargoniums* were staged, and a few boxes of *Panicles*. The prizes in the classes for the most ornamentally filled stand of flowers for the table, also for bridal and ball bouquets, were given by the Mayoress of Leeds (Mrs. Addyman). The first prize in each class was well won by Mr. Wright, gardener to G. Talbot, Esq. The stand was most elegantly filled, there being a total absence of crowding, the feature of the decoration being the sprays of *Clematis* which were disposed with a natural gracefulness that was much admired. The second-prize arrangement of Mr. R. Simpson was also most elegant. If a few heavier flowers had been employed at the base the Judges would have had great difficulty in deciding on the respective merits of the two stands; as it was, the second-prize stand found the most favour with many critics, but the Judges' verdict was undoubtedly correct. The first-prize bridal bouquet was the best we have seen this year: it was neither too flat nor too crowded, but almost every flower could be seen to advantage. *White Lapegerias*, *Tabernaemontanas*, *Panocratum fragrans*, with a few sprays of *Orange blossom* in the centre, and one or two of the dainty *Diosma* (near the margin, and *Ferns*, were arranged with consummate taste, the *Panocratums* especially being very effective. In the ball bouquet a few sprays of *Forget-me-not* and small *Oenotheras* were associated with the flowers named. Many other bouquets were good, but generally too crowded.

#### FRUIT.

The display was more noticeable for good quality than for magnitude. With the exception of a few Grapes that were not quite ripe scarcely a dish of fruit was staged that was not highly creditable to the exhibitors; and taking this section of the Show altogether we must pronounce it decidedly above the average. Six collections of six dishes were staged; Mr. Bannerman, gardener to Lord Bagot, Rugby, securing the first position with a good and well-ripened Pine, excellent Black Hamburg, and full but not quite ripe Muscat of Alexandria Grapes, a fine Tretham Hybrid Melon, and capital dishes of Brown Turkey Figs and Royal George Peaches. Mr. Clarke, The Gardens, Stedley Royal, Ripon, was an excellent second with a grand basket of James Veitch Strawberries, full and fine but not perfectly ripe Golden Champion Grapes, an excellent Royal Ascot Melon finely netted, and superior dishes of Dr. Hogg Peaches and Lord Napier Nectarines. Mr. Pratt, Hawkstone, Salop, was third with large but not quite ripe Grapes, good Peaches, Melon, and Strawberries, and a small Pine. Five collections were also staged in the class for four dishes; Mr. Clayton, gardener to J. Fielden, Esq., Grimston Park, Ulkehalf, securing first honours with a Pine, Melon, Black Hamburg Grapes, and Peaches, all excellent. Mr. Lettis, gardener to Lord Eddland, was a rather close second, and Mr. Bannerman third. In the class for three bunches of black and three of white Grapes Mr. Bannerman had the premier position with Black Hamburg and Foster's Seedling, large and fine. Mr. Wallis, gardener to Sir H. S. Thompson, Kirby Hall, York, being second with very good Black Hamburgs, a little wanting in colour, and equally fine Golden Champions. Mr. Thompson, gardener to

G. Paget, Esq., Transfield Lodge, Guisley, was third with very large examples of Black Hamburg and Muscats, but not quite ripe. Mr. Johnson, manager to Mrs. Noble, Boston Spa, Lincolnshire, was placed first for a single bunch of Black Grapes with medium-sized, full, and well coloured bunch of Black Hamburg, but containing some small berries. Mr. Bannerman was a close second with much finer berries but not quite so black; and Mr. Mann, gardener, St. Vincent's, Grantham, third—fine but not quite ripe. In the corresponding class for white Grapes Mr. Bannerman was first with fine Foster's, and Mr. Wallis second with Chasselas Musqué. The heaviest bunch class contained nothing noteworthy. Mr. Mann won the chief prize with a bunch of Black Hamburg of 8 to 4 lbs. In the single Pine Apple class the prizes went to Mr. Miles, gardener to Lord Carington, Mr. Clayton, and Mr. Bannerman in the order named, all staging good and well-ripened fruits. Peaches were fine throughout, the first prize falling to Mr. Sutton, gardener to H. Bentley, Esq., Rahald House, Woodlesford, for a fine dish, unnamed but resembling Bellegarde; the second to Mr. Bannerman with Royal George, and the third to Mr. Wallis with Grosse Mignonne. Nectarines were rather small, and several not thoroughly ripe. Mr. Miles and Mr. Mann secured the prizes with Elrage. Melons were of good quality, and very equal in point of merit. Mr. Pratt secured the first prize with Tretham Hybrid, Mr. Miles the second with Victory of Bath, and Mr. Clark the third with Royal Ascot. Figs were excellent, Mr. Clark being first with Castle Kennedy, Mr. Frankland second, and Mr. Bannerman third. Mr. Miles was, as usual, placed first for Cherries with Black Circassian, followed by Mr. Wallis with May Duke. Strawberries call for no comment, nor do the Vines and fruit trees in pots; but the first-prize Vine—a Black Hamburg with seven good bunches—with which Mr. Walker, gardener to J. S. Taylor, Esq., Apperly, Leeds, secured the first prize, was a creditable example of cultivation. Cucumbers were tolerably numerous and generally of good quality, but as few of them were named they must be passed without further notice.

There was an excellent display of horticultural structures from Messrs. Halliday & Co., Middleton, Manchester.

It is a source of much regret that the incessant rains of the last two days of the Show necessarily limited the attendance considerably; but undoubtedly the Exhibition would have been largely patronised had the weather been even of a moderately favourable character. Those who labour so assiduously in promoting the Show deserve success, for the object of both the Secretary and the Committee is to improve the horticulture of the district; and the countenance and active aid given to the Committee by the civic dignitaries should incite a generous support on the part of the public, and so render the Leeds Show one of the best provincial exhibitions in England. The arrangement and general management of the Show were, as usual, efficiently carried out by Mr. Billbrough.

#### FRUIT PROSPECTS IN THE SOUTH OF IRELAND.

THE great hopes we entertained with regard to a plentiful fruit cropsome three or four weeks ago have been considerably blighted. Never did we see fruit trees of all kinds bloom so profusely as in the past spring, and fruit set in abundance, but the heavy storms of hail which we experienced from the 8th to the 25th of May left their marks on fruit trees in general for this season.

**Apples.**—In some cases there are moderate crops. Those I find to bear best this year are King of the Pippins, Cox's Orange Pippin, Blenheim Orange, Kerry Pippin; those I consider to have three parts of a crop, while many other varieties of dessert Apples are fruitless. Baking Apples are also poor with the exception of a few varieties—viz., Ecklinville, Lord Suffield, and Warner's King, the latter bearing a fair crop.

**Pears.**—Standard trees have a very light crop, but those on walls are bearing pretty well. The varieties likely to bear best this season are Beurré Giffard, Beurré Diel, Beurré Superfin, Williams' Bon Chrétien, and Louise Bonne of Jersey.

**Plums** are moderately abundant. Prince of Wales, Orleans, Green Gage, Cox's Golden Drop, and Magnum Bonum are among the fruitful of this season.

**Cherries** have a very light crop now, although two weeks ago they wore a very cheering appearance, but having since then shed three-fourths of the young fruit they are consequently light.

**Peaches.**—There is a fair prospect of a crop out of doors if we get some warm weather, as the fruits are swelling rapidly and the trees are comparatively free from aphides and also leaf blight this season.

Bush fruit is in some cases very light. Gooseberries have only half a crop, Currants about the average, Raspberries also bear a fair crop. Strawberries are very good, Keens' Seedling, President, Sir Joseph Paxton, Dr. Hogg, and the Amateur are

the varieties I grow, all of which are well set with fruit.—  
ANDREW CAMPBELL, *Muchcross*.

### MAIDSTONE ROSE SHOW.

I LITTLE expected when I drove up from the station at Maidstone to the skating rink, where the Rose Club held their Exhibition, to find such a collection of Roses as was there exhibited. I knew it was a favoured locality, and that honest John Hollingworth's garden was especially favoured, but I did not think at this dreadful season that even there it would be possible to show Roses worth looking at. It may, then, surprise the readers of the *Journal* to be told that a finer box of eighteen I never saw shown than that with which Mr. Hollingworth won the cup, the Teas especially in it being magnificent. These were all cut from the open air, and fully justify all that I said about his Rose prospects. Before these lines are in type the National will have been held, and I shall anxiously look to see what place he takes.

Let me give, then, the names of his flowers. Madame Bravy, a splendid bloom of great substance and very full; Ernest Boncenne; Souvenir d'un Ami, a lovely bloom; Duchesse d'Osuna; Madame Willermoz; Maréchal Vaillant, fine; Pierre Seletzki; Duke of Edinburgh, very bright; Duchesse of Edinburgh; La Volupté—(this was what the boys call a stunner. Does anybody know it? I remember seeing the name in catalogues years ago, but cannot find it now. I hope that the bloom may be kept sufficiently fresh to show at the National. It is of a lovely shade of cream and fawn, of great substance and large petals. It obtained the silver medal of the National Rose Society for the best Rose in the Show, the bronze medal being awarded to Madame Bravy before mentioned)—Jules Margottin, Thérèse Lavet, John Hopper, Maréchal Niel, Madame Hector Jacquin, Cheshunt Hybrid, Belle Lyonnaise, and a grand bloom of Charles Lawson. The box of twelve Teas which won the first prize was also exhibited by Mr. Hollingworth, and contained fine examples of Madame Bravy, Maréchal Niel, Souvenir d'Elise, Madame Maurin, Belle Lyonnaise, Josephine Malton, Marie Van Houtte, and Devoniansia.

Perhaps the prettiest box in the Show was that of the six Teas exhibited by Mrs. Green, containing lovely examples of Souvenir d'un Ami, Josephine Malton, Maréchal Niel, Devoniansia, Catherine Marmet, and Madame Sertot. In the class for twelve varieties Mr. Wakeley of Rainham was first with Abbé Bramet, a fine flower; Mdlle. Eugénie Verdier, Charles Lefebvre, Marquise de Castellane, Comtesse d'Oxford (very fine), Maurice Bernardin, Leonard Morren, Exposition de Brie, Henri Ledechaux, Capitaine Christy, Camille de Bohan, and Souvenir d'un Ami; the Rev. H. R. Biron, the energetic Secretary of the new Rose Society recently established at Canterbury, being a good second. In the class for twelve blooms, six Hybrid Perpetuals and six Teas, Mr. Hollingworth and Mr. Wakeley were equal first. Mr. Hollingworth's flowers, Comte de Brabant, Madame Maurin, John Hopper, Belle Lyonnaise, Madame Bravy, Duchesse d'Osuna, Maréchal Vaillant, Marie Van Houtte, Souvenir de Dr. Jamin, Allemand, Madame Hector Jacquin, and Madame Willermoz. Mr. Wakeley's flowers were Mdlle. Eugénie Verdier, Abbé Bramet, Gloire de Dijon, Maurice Bernardin, Henri Ledechaux, Marie Van Houtte, Mdlle. Annie Wood, Souvenir d'un Ami, Céline Forestier, Jules Margottin, Bouquet d'Or, and Cheshunt Hybrid. The prize for the best six of any variety was won by Maréchal Niel; the second going to Mr. Hubert Benet for a beautiful box of Noisette large and clean. In the class for six there were seven entries, Mrs. Green taking first with Alba Rosea, Maréchal Niel, Anna Alexieff, Duke of Edinburgh, and Comte de Paris.

This, the first show that I have attended this season, confirms the opinion formed by many rosarians, that when it does really open the queen of flowers will come forth in grand form. In the meantime most societies are putting their exhibitions back a week.—D., *Deal*.

### NOTES AND GLEANINGS.

THE EVENING FÊTE to be held in the gardens of the Royal Horticultural Society on Wednesday next, July 9th, promises to be one of unusual interest. The Roses and Polyanthus staged on the preceding day will continue on view, and various systems of electric lighting will be displayed. The Conservatory and the Flower Show tents will also be brilliantly illuminated. As the members of the International Telegraph Conference now being held in London will be present, every effort is being made to render this occasion one of the completest exhibitions of open-air electric lighting ever seen. The whole of the arcades, quadrants, and exhibition tents will be connected and lighted, so that in the event of wet weather it will be possible to walk entirely round the gardens under cover. There will be a large and interesting display of electrical, galvanic, and other scientific instruments, including Mr. Edison's loud-speaking telephone, phonographs, microscopes, &c., with demonstrations. The bands of the First

Life Guards and of the Horse Guards (Blue) will perform selections of music. At half-past ten o'clock the bands will be combined upon the upper terrace. The members of the Lombard Amateur Musical Society will sing glee, &c., in the open air and in the Conservatory.

— WE are informed by a correspondent that some of the successful exhibitors at the ROYAL BOTANIC SOCIETY'S SUMMER SHOW in 1878 had not received their prize money on the 27th of June, 1879. Our correspondent asks, "Why the Secretary pays some of the exhibitors at the commencement of the new year and keeps others waiting for months afterwards;" and further observes that "a Society of such pretensions and patronage ought to clear their liabilities sooner with those to whom they are indebted for making the shows. Many exhibitors have to pay ready money for the carriage of their plants, and they feel it hard to have to wait more than twelve months for their prize money. Provincial societies recognise this fact, and many of them pay the prize money within a few days of the exhibitions."

— A CERTAIN Dr. Bretschneider, who hails from the Russian Embassy at Peking, states seriously in *Regel's "Gartenzeitung"* that the Chinese raise WEEPING TREES by reversing their extremities! We have many a time put on grafts upside down to see what the effect would be on the direction of growth, and as a matter of course the growing axis was always turned in an upward direction. Dr. Bretschneider might as well say that a seed planted in the ground with the plumule downwards would throw its roots in the air.

— AMONGST recent gardening appointments we learn that Mr. WILLIAM STAPLES, late gardener and steward to the Hon. Cecil Duncombe, Newton Grange, Newton, has obtained an appointment at Gorton, Cambridge, Auckland, New Zealand. Mr. CHARLES HOSKINS, late gardener to C. Wingfield, Esq., Onslow, Shrewsbury, has been appointed gardener to George Wilder, Esq., Stanstead Park, Emsworth, Hants, succeeding Mr. Clarke in that position, Mr. CLARKE having become gardener to Sir Gilbert Clayton East, Bart., Hall Place, Maidenhead.

— WE are informed that the NATIONAL ROSE SOCIETY'S NORTHERN EXHIBITION at Manchester has been POSTPONED until July 19th, and the Oxford Rose Show is to be held on the 15th of July, and not on the 16th as stated at page 478.

— RECOGNISING the valuable services of Mr. JOHN WILSON, the able Secretary of the York Floral Fête since its establishment twenty years ago, the exhibitors and admirers of the shows are raising a subscription for presenting Mr. Wilson with a testimonial as a mark of esteem for his labours in connection with the events that have afforded so much satisfaction to the inhabitants of the city and neighbourhood.

— WE have received a plate of a NEW SEEDLING AZALEA Madame Jean Nuytens Verschaffelt, raised by M. Jean de Kneef. As represented in the plate the variety is one of great beauty. The flowers exceed 4 inches in diameter, are flat and nearly circular. The flowers are white faintly tinted with rose, with a slight yellow blotch on the upper petals, this blotch, however, fading to white. The petals are waved but not crimped, and the foliage and habit of the plant are described as all that can be desired. Plants will be distributed during the ensuing autumn by M. Jean Nuytens Verschaffelt of Ghent.

— A CORRESPONDENT, "TWEEDSIDE," informs us that there is at present to be seen growing in the open ground in the garden of Mr. Andrew Blaikie, Newtown Street, Dunee (Berwickshire), a plant of LILIUM MONADELPHUM SZOVITZIANUM in full flower. It is 6 feet in height, and has twenty-nine stalks and 247 flowers. The greatest number on one stalk is fifteen.

— THAT fine collection of ORCHIDS, the property of O. O. Wrigley, Esq., Bridge Hall, Bury, was recently sold by Mr. J. C. Stevens, there being 1194 lots, and the sale occupied four days. The following are some of the principal prices realised:—Cypripedium Stonei, 21 guineas; C. caudatum, 8½ guineas; C. Veitchii, 15 guineas; C. levigatum, 10 guineas; Calanthe veratrifolia, 10½ guineas; Cattleya aurea, 12 guineas; Vanda tricolor, 16 guineas; Odontoglossum pulchellum, 11 guineas; Saccolabium praeorsum, 12 guineas; Anguloa Clowesii (figured on page 70, vol. xxxv.), 22 guineas; Calogyne cristata, 13½ guineas; Odontoglossum vexillarium roseum, 7½ guineas; Vanda suavis, 15½ guineas; Masdevallia vexillarium, 14½ guineas; M. tovarensis, 9½ guineas; Lycaste Skinneri



alba, 36 guineas; Masdevallia Harryana sanguinea, 25 guineas; M. Veitchiana, 14½ guineas; Anthurium Schertzerianum, 28 guineas. The total amount realised by the sale was £2304.

— IN consequence of the lateness of the season the NATIONAL CARNATION AND PICOTEE SOCIETY'S SOUTHERN SHOW has been postponed from July 22nd to August 12th. It will be held in the Royal Horticultural Gardens at South Kensington.

— A CORRESPONDENT, "E. P. N.," informs us that in the Deanery garden at Canterbury is a good-sized specimen of the PAULOWNIA IMPERIALIS raised by the present Dean from seed ripened in the rectory garden at Ewelme. Our correspondent also states that when he was at Montpellier in the spring of 1855 he saw in the Botanical Gardens there a fine specimen covered with large bunches of its beautiful lilac blossoms; and further observes that what adds to the beauty of the flower is the peculiar woolly brown calyx. The tree referred to was at least 18 inches in diameter.

— A CORRESPONDENT sends us the following extract from "Chambers' Journal" relative to STRAWBERRY FARMING IN SCOTLAND. "Strawberry farming on an extensive scale has been going on for some time in Scotland. On the Muir of Blair, an extensive tract of land lying between Blairgowrie and Coupar-Angus, there is a community of about seventy-five Strawberry farmers who earn a living for themselves and families at the business of Strawberry growing. The fruit is usually sold *en masse* to the preservers; and in some years as much as £46 an acre has been realised by the sale, but the average income from a Scottish Strawberry farm is seldom more than £27 an acre."

### THE OLD YELLOW ROSE.

By the same post we received two inquiries relative to this Rose. "E. A." wished to know where it is to be obtained, and a "YOUNG NURSEYMAN" desired to know to "what Rose the term 'old' properly applies." Perhaps some of our correspondents can answer the former query. This Rose is, we suspect, scarce; but it is not lost, for, if we mistake not, it was exhibited at South Kensington last year under the modern name of Burghley Yellow. The "old" yellow Rose is *Rosa sulphurea*, and it is worthy of its prefix "old," for it has been cultivated in England for upwards of 250 years. This is evident, since it is minutely described by Parkinson in his "Paradisius," which was published in 1629. The old author's description is so quaint yet so particular that we reproduce it.

"The double yellow Rose is of great account, both for the rarity, and doubleness of the flower, and had it sent to the rest, would of all other be of highest esteeme. The stemme or stocke, the young shoots or branches, the small hairy prickles, and the small winged leaues, are in all parts like vnto the former single kinde; the chiefest difference consisteth in the doubleness of the flower or Rose, which is so thicke and double, that very often it breaketh out on one side or another, and but a few of them abiding whole and faire in our Countrey, the cause thereof wee doe imagine to bee the much moisture of our Countrey, and the time of flowering being subject to much raine and showers; many therefore doe either plant it against a wall, or other wayes defend it by couering; againe, it is so plentifull in young shootes or branches, as also in flowers at the toppe of euery branch, which are small and weake for the most part, that they are not able to bring all the flowers to ripenesse; and therefore most of them fall or wither away without comming to perfection (the remedy that many doe vse for this inconuenience last recited is, that they nippe away most of the buds, leauing but some few vpon it, that so the vigour of the plant may be collected into a few flowers, whereby they may the better come to perfection, and yet euene thus it is hardly effected) which are of a yellowish greene colour in the bud, and before they be blowne open, but then are of a faire yellow colour, very full of leaues, with many short haire rather than leaues in the middle, and hauing short, round, greene, smooth buttons, almost flat vnder them: the flower being faire blowne open, doth scarce giue place for largenesse, thickenesse, and doublenesse, vnto the great Prouence or Holland Rose. This Rose bush or plant is very tender with vs here about London, and will require some more care and keeping then the single of this kinde, which is hardy enough; for I haue lost many my selfe, and I know but a few about this towne that can nourse it vp kindly, to beare or

scarce to abide without perishing; but abideth well in euery free aire of all or the most parts of this Kingdome: but (as I heare) not so well in the North.

"The double yellow Rose, first was procured to be brought into England, by Master Nicholas Lete, a worthy Merchant of London, and a great loue of flowers, from Constantinople, which (as wee heare) was first brought thither from Syria; but perished quickly both with him, and with all other to whom hee imparted it; yet afterwards it was sent to Master Iohn de Franqueuille, a Merchant also of London, and a great loue of all rare plants, as well as flowers, from which is sprung the greatest store, that is now flourishing in this Kingdome."

The term "sulphurea" does not sufficiently represent the colour of the flower, which is almost as bright as the yellow Crocus. Even if it is scentless it is nevertheless desirable that this distinct old Rose be increased, as it is the brightest and fullest of all yellow Roses.

### FARNINGHAM ROSE SOCIETY'S SHOW.

THE valley of the Darent has long been known to Londoners, not only for its rich pastoral beauty, but as a favourite resort for the disciples of Isaac Walton. Amongst the villages that nestle around its banks none are better known and appreciated than the village of Farningham; and the old hostelry of the "Lion" has many pleasant memories in the recollections of those who have followed the gentle art. Happily the ruthless hands of modern improvers have not reached the village; and one can hardly fancy that within seventeen miles of London a place can exist so utterly unchanged from the quiet village of the last century. The inhabitants have managed to keep the railway from them; and although it is within two miles of three stations, that foe to all rural beauty and destroyer of all æsthetic ideas has not come near. Here no staring rows of red-brick abominations, no cockney villas or flaring "publics" are to be seen; and its quaint old houses and lovely surroundings can be thoroughly enjoyed by all who love the unique character of English pastoral scenery.

Here, then, some lovers of the Rose determined to start a Society for the special encouragement of their favourite flower. Happily for them, they determined that its first exhibition should not be dependant on the Rose, but added prizes for greenhouse and other plants, cottagers' productions, &c. It was well that they did so, for in this most disastrous of all seasons that we have ever known for the Rose they have been simply obliged to postpone their show until the 8th of July, and hence the Exhibition held to-day (June 24th) was confined to the greenhouse plants and table decorations. I think it is not often that in so quiet and retired a country place such collections of foliage and flowering plants are brought together as were shown here from the gardens of Messrs. Spottiswoode, Mildmay, &c.

Fine specimen plants of *Clerodendrons*, *Stephanotis*, and *Tree Ferns* were exhibited that might very well have done duty at a metropolitan show, while the arrangement of groups of plants was excellent. There was one tent which might well furnish a pattern and give a lesson to many exhibitions. The centre of it was arranged for exhibitions of miscellaneous plants grouped for effect; the plants were not large, and the stage was not more than one foot from the ground; hence the eye took in, not a quantity of pots, but the whole effect of the foliage and flowers, while it had an advantage which groups resting on the ground are deficient in—viz., that of bringing the plants nearer the eye. The table decorations and bouquets were arranged around the sides of the tent, and some of them were of considerable merit, that which obtained the first prize especially so. Another arrangement was made here which could not be done in many places. The valley is well known for its paper mills, some of our best brands coming from it. Well, a large roll of endless cart-ridge about 6 feet wide was brought direct from one of the mills to the tent, and according as it was wanted strips were cut off to cover the staging, giving the appearance of beautiful white table linen, while after the Exhibition it would be all collected again and returned to the mill to be used up.

The Exhibition was held in a very beautiful meadow belonging to Mr. Rasleigh, surrounded by stately Elms of great beauty; and although nothing could have been more deplorable than the appearance of the morning, rain falling in torrents, yet about eleven it all cleared off and a lovely afternoon with bright sun brightened up everything, not the least the spirits of their indefatigable Secretary Mr. Burnside and a hard-working Committee, who had done their best to make it a success, who must have been most gratified at the result.—D., Deal.

### CERASUS VIRGINIANA.

SOME years ago there was a tree growing in one of the belts on the south boundary of the old Chiswick Garden which attracted the attention of lovers of trees when it was in bloom.

and which was erroneously labelled *Cerasus capollin*. That it was not *Cerasus capollin* was evident from the broad ovate lanceolate leaves and the bold erect leafless racemes of flowers. It was a tree which engaged Loudon's notice, and in the "Arboretum et Fruticetum Britannicum" he remarks, when treating of *Cerasus capollin*, that the flowers produced on a

plant bearing this name in the London Horticultural Society's Garden are not those of that species. "Its leaves also are much too broad and elliptical; and the leaves, the flowers, and the whole tree bear so much resemblance to *C. virginiana* that we have no doubt of its being only a variety of that species, but of larger and more luxuriant growth."



Fig. 1.—*CERASUS VIRGINIANA*.

Of the tree thus referred to we furnish our readers with a representation; at the same time we do not consider it the *Cerasus virginiana* of Michaux, neither is it the *Cerasus Padus* of Decandolle as some have supposed it to be. After a careful examination we have come to the conclusion that it is the true *Prunus virginiana* of Linnæus, and the *Prunus Cerasus rubra* of the "Hortus Kewensis," ed. 1. It differs from *Cerasus Padus* in the habit of the tree, which is stronger and more

rigid and luxuriant; in the glandular leaves, those of *C. Padus* being eglandular; in the long, rigid, erect, leafless racemes, those of *Padus* being drooping and leafy; and by its later flowering, which is not till the middle of June.

Our object in figuring this species is to bring into notice a tree of great beauty which appears to be very little known. The tree whence our specimen is taken was raised from seed of the tree at Chiswick, and it is now an object of great

beauty at Stillyans in Sussex, the new residence of Lady Dorothy Nevill.

## PLANTS AND TREES AT MERLIN HALL, CLONMEL.

"BE not the first by whom the new is tried,  
Nor yet the last to lay the old aside."

THIS motto, which is not unsuitable in many of the transactions of life, would seem to be often commendable in floriculture, especially when considering perennial, herbaceous, and border plants. Correspondents and visitors too often when visiting gentlemen's residences and noting what they consider deserving, frequently overlook those old and modest plants for the more brilliant but less durable annuals and bedders. I have, in company with the head gardener at Minella, visited this picturesquely situated residence, and was kindly shown over it by the courteous owner, Benjamin Foyle, Esq., J.P., and shall copy a few notes on perennials and border plants then taken, together with some brief observations on ornamental shrubs and trees, which, remembering the inquiries frequently made in the columns of the Journal, cannot fail to interest many readers.

**HERBACEOUS PLANTS.**—*Præcox*.—The blue *I. germanica* is now fading, but there are fine specimens of the white *aphylla* and *amœna*. They are rarely met with, but form a splendid contrast with different plants to be mentioned presently. A little mulching or top-dressing once a year is about as much care as they require.

*Liliums*, &c.—Besides these ordinarily grown, such as varieties of *L. tigrinum*, the old Turk's Cap; *L. albanum* and its varieties, luxuriant and are now opening into bloom. *Ornithogalum* (Star of Bethlehem), and some dwarfier kinds peep out from beneath bright blue Periwinkles, *Convallarias*, *Ambrosium liliastrium*, &c.

*Pæonies*.—Why those great crimson heads of *P. tenuifolia* fl.-pl. are not to be found in every flower border does often surprise me. *P. æmoneasiflora*, though smaller, is even more brilliant and curious. They require no further attention except a little protection from spring frosts which a well-arranged shrubby border affords, and some top-dressing. If not more brilliant, much more conspicuous and chaste in colour was a fine Tree Pæony, *Pæonia montana rosea*. It certainly looked a splendid object, literally a mass of fine pale rose flowers. We were curious enough to count the flowers, and they numbered nearly two hundred. It was not much over 4 feet high and as many through.

*Acanthus latifolius*.—The fine glossy leaves of this ornamental plant, which retain their verdant polish for ten months out of every twelve, would grace any border, and may fairly be compared with that more recent introduction from the Cape, *Strobæa purpurea*, which it resembles. It does not like removal, requires no care, and does well as at Merlin in a sunny nook by a south wall.

*Tritoma*.—I might have included these among the *Lilium* group, but they are very distinct. *T. grandis* would seem to do better here than the more common scarlet *T. Uvaria*. Neither would seem, notwithstanding the elevated situation, to have suffered as severely as in other places from the winter and spring frosts. They are fine autumn plants, and, like those already named, requiring neither housing, wintering, or transplanting. They look fine overtopping low evergreens or small herbaceous plants, when their great scarlet poker-like heads at once arrest the eye, or when associated with the feathery *Glycerium* (Pampas Grass).

*Papavers*.—If *Tritomas* and *Pæonies* are conspicuous in the mixed border, they are certainly in this respect exceeded by *P. orientale*, the great scarlet Eastern Poppy. No object will sooner arrest attention. They do best as here peering out from behind other dwarfier perennials, as their long stems are leafless, and in this respect differ from the crimson *P. bracteatum*.

*Salvia candidissima* (the White Salvia).—The peculiar glaucous silvery foliage of this fine plant should entitle it to a place in every border or bedding collection. The flower is not showy but still very curious. A fine specimen was in bloom in the greenhouse.

*Double Rocket* (*Hesperis matronalis alba* fl.-pl.).—Any person who has seen those sweet-scented tall-growing flowers in company, say, with *Campanula pyramidalis*, the *Rockets*, *Larkspurs*, *Lapines*, and the deep blue *Delphinium formosum*, or blue *Salvia patens*, would instantly resolve to have them at once.

**ORNAMENTAL TREES AND SHRUBS.**—*The Arber-Vita* is

represented by many fine specimens. There is nothing finer than the variegated *Thuja dolabrata*. A few fine healthy young specimens are doing well at Merlin, and contrary to the accepted theory of older times they are perfectly hardy, and have escaped last winter quite unscathed. They were formerly grown in the greenhouse, and would when small be very ornamental.

*Mistletoe*.—This is often inquired about. Mr. Foyle has it growing on the Mountain Ash, the Hawthorn and the Apple. He merely attaches the glutinous berries, when the seeds are fully ripe, to a slit in the younger wood and protects them from birds. They thus grow and form curious objects, being particularly welcome on festive occasions.

*Abelia floribunda*.—A greenhouse evergreen shrub, but here it does remarkably well planted out against a protected south wall. It bears fine rosy-purple flowers in spring, and deserves a further trial planted out.

*Brachyotus globulus* (the Australian Gum Tree), so much recommended as a preventive of fever miasma. A fine specimen was growing here on a south wall last year, but upon inquiries I find the last winter was too severe for it and it succumbed, though in other places growing again from the old stem.

*Eucollonia macrantha*.—In many places this fine shrub was killed outright; here it grows on in rude health, possibly, as in many other instances thus noticed, owing to protection afforded against cutting March winds, by some large forest trees judiciously planted. The same observation is true of the *Bays* and *Arbutus*. I may here note that underneath the *Arbutus* were fine young specimens of seedlings growing naturally from the self-sown berries, so that here, as in Killarney, this species grows naturally.

*Eugenia*.—*E. apiculata* flourishes here in the open ground, though by no means generally hardy. It has suffered much less than many other members of the Myrtle family, *Myrtus communis* being killed down to the ground in almost every instance, though now slowly commencing to make young growth.

*Aristolochia Sipha*.—This curious American wall climber covers a distance of 10 feet here. The flowers are of a pale green colour, and shaped like a meerschaum pipe. Mr. Foyle has rarely found a fertile seed, possibly owing to the difficulty of impregnation.—W.J.M., Clonmel.

## CROYDON HORTICULTURAL SOCIETY.

JUNE 25TH.

DRIZZLING rains all the morning preceded the opening of this Society's annual Exhibition, and the only wonder is that in the midst of such unpropitious weather such a satisfactory display could have been collected together. The whole of the exhibits were arranged in one extensive marquee. Prizes were offered for groups of plants arranged for effect, both for single-handed gardeners and for gardeners who possess more convenience and appliances for cultivating decorative plants, and some excellent collections were exhibited.

**ROSES.**—There was a far better display of these than we expected to see, Mr. Penfold obtaining first honours for twenty-four distinct; *E. Mawley*, Esq., the same for twelve varieties, which were very bright and clean. Mr. Orchard, gardener to F. W. Harris, Esq., was first for six of any variety, exhibiting splendid blooms of *Cheshunt Hybrid*; Mr. E. Mawley being second with the same variety; and Mr. Mawley also secured the first prize in the special class for twelve cut Roses with a good box of Rubens, Mr. Andry, Madame Williams, *Cheshunt Hybrid*, Caroline Kuster, Madame Margottin, Madame Bravy, *Maréchal Niel*, *Souvenir d'un Ami*, *Gloire de Dijon*, and *Marie Van Houtte*. Mr. Orchard obtained the second place. Mr. W. Piper, Uckfield, Sussex, exhibited a very bright collection of twenty-four, which included four varieties of Mr. Bennett's "new Hybrid Teas," and which we hope to see again during the season. *Vicomtesse Falmouth* as here exhibited was of the character of *Cheshunt Hybrid*, only a trifle lighter; *Duchess of Connaught* was very similar to *Madlle. Eugénie Verdier* or *Marie Finger*; and the Hon. Charles Bancroft a shade darker rose than *Charles Lawson*, but possessing very much of that Rose's flat character. The most promising Rose of the four was decidedly *Duke of Connaught*, the colour a very pleasing crimson, but as exhibited small in size.

Stove and greenhouse plants were represented by three collections of large plants, which occupied a great space of the centre stage. Mr. King, gardener to Stephenson Clarke, Esq., Croydon Lodge, was awarded the first prize with massive and well grown plants. Mr. Penfold and Mr. Fewell followed. In the class for six Mr. Chaff, gardener to C. H. Goshen, Esq., The Ballards, was an easy first, and also obtained the first prize for a single specimen flowering plant with *Allamanda Hendersoni*. Ferns were



numerous and good, and various other miscellaneous plants were well shown.

The display of good fruit was very limited, but well finished. Grapes came from Mr. W. B. Glossop, gardener to F. Banbury, Esq., Shirley Park, who was awarded the first prize in each case. Several collections of vegetables were sent, but Mr. Chaff's were decidedly the best. One very interesting plant in this Exhibition was a very fine specimen of *Lilium giganteum*, quite 9 feet 6 inches in height, bearing ten most beautiful flowers. An extra prize was awarded. The display was altogether worthy of the district, and the Show was well attended in the afternoon. The Secretary (Mr. C. Boffey) is to be congratulated, and deserves much praise for his efforts in connection with this Society.

#### DICTAMNUS FRAXINELLA.

My experience differs from that of your correspondent Mr. R. D. Taylor in respect of the floriferousness of this species. I have now two plants (one with white, the other with pink flowers) that were planted eight years ago: the former now shows twenty-five, the latter twenty-one spikes of bloom, some stronger than others and not yet expanded, being quite a fortnight later this season than usual. They are growing in a partially shaded border of poor light soil, which is never disturbed, but has in autumn a top-dressing of leaves nearly decomposed, and in summer two waterings with diluted sewage from the house tank. The pink variety may, I think, be recommended as one of the most handsome of hardy perennial border plants, and owing to the neat and stout habit of growth no unsightly sticks are necessary for their support.—F. W., *Abingdon*.

#### THE OLD MARKET GARDENS AND NURSERIES OF LONDON.—No. 24.

CLAPHAM, Wandsworth, and Battersea are three places in the south-western suburbs of London which have a natural connection, though they present strong points of difference. When Lyons published his "Ravirons" in 1811 they might all have been appropriately designated "villages," for they were distinct from the great metropolis, and they were not of a size to be called "towns." These are situated upon and about the western end of a range of the Surrey hills to which we have already referred, and which stretch across an irregular space between the windings of the Thames from Greenwich to Battersea. The hills in this locality have received the names of Clapham Rise, Larkhall Rise, Lavender Hill, and Battersea Rise, but they are not now so definable as once they were owing to the houses, which have covered what was open country in the recollection of many living. From these hills flowed down in most seasons various little streamlets, which finally vanished in the Battersea marshes, and which were of utility to those gardeners who were not near the river by providing them with soft water. In several of the fields that are yet unbuild upon we may see the Willows remaining which formerly luxuriated on the banks of streamlets now dried up or which have been filled-in. But Battersea, if it has less water on its surface, is undoubtedly better drained than it was, say thirty years ago, when in an epidemic of cholera some of those who worked in its market gardens were suddenly carried off; but still in healthiness it will not bear comparison with its neighbour Clapham, which by the returns is the most salubrious district of South London. The peculiarities which made Battersea so suitable for the culture of Asparagus, Artichokes, and Melons do not tend to the benefit of humanity, however—that is, the low position on the river's bank with a moist subsoil. Also, the neighbourhood abounds with smoke-emitting factories and chemical works. There does not appear to be any truth that Chelsea and Battersea acquired the final syllable of their names because the Thames at this point sometimes widened out into a miniature sea, but still the adjunct "ey," or "sey," had to do with their nearness to the river. It curiously illustrates how names undergo transformations, that, in the time of the Conqueror, Battersea was "Patricey," not in any way connected with St. Patrick, however, for it was a part of the property of St. Peter's, Westminster.

As in the instance of other suburbs, it would be a mistake to suppose that all, or almost all, the land that is covered with new streets was once market garden ground. Some of it had been attached to private residences, and there were many fields where cattle grazed, when London did not receive the bulk of its milk supply from distant places. (By the way, one evil of this is, that it is very difficult to ascertain under what sanitary, or insanitary, conditions such milk is produced.) And

some acres of the land that was under cultivation were occupied with plants used for the winter food of cows. It was natural for those gardeners who in Stuart times were growers of vegetables for the London market on the extensive tract of land in Middlesex, near what were known as "The Neat-Houses," to glance across the Thames with a desire to enter upon the possession of the "sweet fields beyond the swelling flood;" and there seem to have been market gardens at Nine Elms and Battersea early in the eighteenth century. Railways were non-existent, and the Thames was for many years a handy means of conveying produce to Hungerford and Covent Garden markets. It is stated that several of the refugees from France and Holland, who had at first settled in Kent, migrated to Battersea and adjacent places on finding they could get a good sale for their vegetables and fruit, our English gardeners being far less skilful in some respects. The Wallrons, indeed, were at Wandsworth as early as 1583, but they chiefly employed themselves in manufactures, availing themselves of the water power of the river Wandle. In the Huguenot cemetery at East Hill, Wandsworth, quaintly called "Mount Nod," lie the remains of various refugees to whom, doubtless, English horticulture owes somewhat, but their histories have perished, though their tombs still record their names and ages.

The better class of market gardens and some orchards were on the higher ground towards Battersea Rise and Wandsworth. The name Lavender Hill, yet extant, may indicate that Lavender and other aromatic plants were formerly grown here before another Surrey district became so famous for them. Along the Clapham and Wandsworth Roads the nurseries were numerous in the early years of Her Majesty's reign, but many have disappeared, or they have lost nearly all their open ground, and receive their plants mostly from establishments in the country. Originated by the demands of an increasing population a still further increase has been unfavourable to them, because the land could be made to yield more in building leases; moreover, the air became too contaminated to allow of the culture of choice plants. That some acres about Nine Elms and Battersea, below the level of the Wandsworth Road, have been spared by the builders arises from the proximity of railway works, the land being too unpromising for speculation, so that Cabbages and Lettuces are suffered to grow, though their appearance is suggestive of dyspepsia. A part of this ground—which once perhaps yielded Asparagus, Cucumbers, and Melons—is fenced round with a care that seems ludicrous, while other parts are open to the excursions of boys, cats, and dogs. The condition of some of the roads in Battersea suggests that the gardens hereabout were still in the habit of being supplied with manure from a distance, as an old history informs us was the case a century ago or more, but that a good deal of it was distributed *en route*. An illustration of the marshy character of the land is given by some patches that lie waste for the present, where Cotton-grasses and Mosses mingle with stunted self-sown vegetables, and Celery run wild struggles against overgrown Horseradish plants, with masses of straggling Marigolds throwing a yellow tint over the ridges. There are near Surrey Lane two fine Privet hedges, which must have been planted many years since, and which screened some of the garden ground, but the smoke of modern days is unfavourable to them.

Battersea Park occupies the larger portion of old Battersea Fields, which was formerly parish property, given to Battersea, so 'tis said, in consideration of kindness shown in the burial of a drowned man, and while some of the land was cultivated much of it was bare until the Park was commenced in 1852. The market gardeners are still at work in the outskirts of the park, but as the sites here are more eligible than in other districts of Battersea their ground is being diminished every year. Lastly, concerning Battersea we note that for a short time the late Mr. Knight had a nursery close to the Wandsworth Road, where about 12 acres were laid out in mathematical plots; of its name, "Brooklands," a reminiscence survives in a tavern called the Brooklands Arms.

If we pass up what used to be known as Pig Lane, and which intersected market gardens until ten years since, towards the higher ground in Wandsworth we find near the railway bridge Curland Nursery has a small extent of open ground attached to it, where evergreens and other plants struggle with some success against the smoke, but at the time of our visit the evergreens had evidently suffered from the severe winter—a common complaint. Less easily found in Priory Grove, near Larkhall Rise, is the nursery of Mr. F. Valler, formerly Valler & Son, apparently of about the same

date as most of the nurseries hereabout. There is little culture of plants except under glass, the remnant of its open space being now occupied by an iron church, so that if the occupier of the pulpit wishes to preach a "flower sermon" he can readily get illustrations. In the direction of London, fronting the Wandsworth Road, is the Springfield Nursery, established by Mr. Buxton, but now in the hands of Mr. Chard; and a few yards to the east is a place that bears the title of Springfield Watercress and Pleasure Grounds. The style of the label announcing that Cabbage plants were for sale seemed to indicate some antiquity. This is one of the few places where Watercresses are grown near London, and it set us wondering why, seeing the demand for this wholesome esculent is so large, it is not more generally cultivated in the vicinity of the Thames, where suitable spots are plentiful.

Clapham has hitherto been a suburb almost destitute of market gardens. In a return published some years ago only 3 acres are stated to be thus occupied, although upwards of 400 acres are set down as "meadow," including, we suppose, Clapham Park, an estate of the Bowyers, and which was known as Bleak-hill Farm until Mr. Thos. Cubitt in 1824 took a lease of it, made roads, and planted shrubberies, subsequently erecting handsome private residences; but floriculture has for many years been largely carried on at Clapham by various amateurs who were men of wealth, such as Messrs. Thornton, Webb, and Hibbert. Mr. Hibbert had at the beginning of this century a large collection of Heaths, Banksias, and other Cape or Australian plants, and in his establishment the late Mr. Knight received his training. The Royal Claremont Nursery, close to the Common, is probably the most conspicuous nursery in Clapham at present; the ground attached thereto is moderate in extent. Mr. Boyce of the Clapham Road Nursery, near Stockwell, informs me that his nursery was established by Mr. R. Atiles about 1840. Nearly an acre here is covered with buildings. This has been a nursery devoted to softwooded flowering plants, and much resorted to for Camellias, Geraniums, &c. Indian Azaleas and double Primulas have also been a speciality with the proprietor. A smaller establishment in the same road, which is now called the Rose Nursery, once belonged to Mr. Fairbairn, who was famous for his Cape Heaths some thirty or forty years ago. In Manor Street, Clapham, is situate another small nursery, now in the occupancy of Mr. Bedford.—C.

**THE LIME GROVES OF MONTSERRAT.**—The little island of Montserrat, one of the most charming and salubrious of the British West-Indian colonies, with an area of but forty-seven square miles, or considerably less than that of London, contains the most extensive and best cultivated plantations of the Lime fruit tree in the world. These "orchards" are the development of a small plantation established but a quarter of a century ago by a Mr. Burke, when the virtues of the juice of the Lime fruit were not so universally recognised as they are now, when for the captain of a ship to neglect to distribute among his crew their daily dose of lime juice is to run the risk of heavy pecuniary penalties, to say nothing of serious outbreaks of scurvy. The cultivation of the plant, which involves a large outlay of capital with no immediate return, was not at first attended with any commercial success, but the Montserrat Company now owns six hundred acres of land, bearing 120,000 trees, from which a crop is gathered nearly all the year round, the heaviest harvest extending for three months, from September to January. The appearance of the trees—with their dark green leaves growing thick and bushy, and relieved at one and the same time by the bright fruit in different stages of ripeness, from green to a rich ruddy yellow, and by the fragrant white flowers, resembling Orange blossoms—is one of extreme beauty, and a Lime tree orchard is perhaps unequalled by any other similar plantation. The very leaves of the tree emit a delicious perfume, and are largely used in the West Indies for the purpose of scenting water for toilet and other purposes. The trees do not bear fruit till they are seven years old, and during that period they require careful attention and pruning; they are otherwise easy of cultivation, flourishing best in light soils near the sea. The production of fruit is very large; and the process of extracting the juice is easy, the fruit being simply sliced and pressed, and the juice at once placed in casks ready for exportation. A secondary product is citric acid, which is procured from the inferior fruit, and by a subsequent manipulation of the refuse from the first process of squeezing. There is room for a large extension of the industry, and many of our colonies besides the little Leeward Islands might turn

their attention with advantage to the cultivation of the Citrus Limetta.—(*The Colonies and India.*)

#### NOTES ON VILLA AND SUBURBAN GARDENING.

Now that all the summer bedding-out arrangements are completed attention must at once be turned to propagating and preparing a stock of plants for filling the flower beds in the autumn, so that the beds may present a gay appearance in the spring. In ordinary winters they thrive, and when well in flower they lend a charm to the flower garden department some months before it is safe to plant out the summer occupants. Many plants, such as Polyanthus, Daisies, Aubrietias, Arabises, and others should be divided and transplanted in the reserve garden at regular distances apart, where they will have time to become established and can be lifted to take the places of the summer bedding plants after the latter have ceased to be ornamental. The double yellow and choice varieties of Wallflowers are increased by taking off as many of the young shoots at the joints (called slips) as required, and inserting them in very sandy soil under handlights, allowing the lights to remain on until the young plants will bear exposure to the air without flagging. The common single dark variety can be readily increased by seeds, and after the seedlings are large enough to handle transplant them in an open position and on tolerably poor soil in order to make them dwarf and stocky. Thus treated they will withstand the winter and cover the ground better. *Myosotis* and *Silenes* are best raised annually from seed, which should be sown early in July, for there is nothing lost by sowing early, as the plants bloom correspondingly early next spring.

The dull, showery, and almost sunless weather we have experienced around London for some time has been advantageous to the bedding plants, and the work for the present will be confined to regulating the growth and keeping them free from weeds. The foliage of every plant is remarkably fresh and clean. *Rhododendrons* have bloomed profusely, and the trusses were immensely large; the plants are now making extraordinarily rapid growths. Carefully look over every plant and pinch off the fading flower truss before it has had time to form seedpods; they are more easily removed while young, and if left on they tend to exhaust the new growths and present a brown and untidy appearance the remainder of the year. These same remarks apply equally to hardy Azaleas and *Kalmias*, both of which are not nearly so extensively grown in villa gardens as they deserve. The varieties of the former are now very numerous, and whole beds may be devoted advantageously to their culture. Almost any kind of light soil will suit them, and they furnish a large and useful supply of bloom early in the year. Roses are coming into bloom very slowly; but the foliage is remarkably fine, bright, and clean. Caterpillars and the Rose maggot have been very numerous, and will for some time yet require constantly hunting after to keep them in check. It is very annoying to the cultivator to find plump buds that a few hours ago looked so promising, eaten on one side. Destroy all shoots on the Briars either springing from the roots or the stems.

Gardeners and amateurs are sorely tried just now to keep the grass well and evenly mown and the weeds in check. The moist sunless weather causes both to grow very rapidly, and it is only with attention, perseverance, and hard work they can be kept sufficiently under. It is next to useless to hoe weeds and allow them to remain on the surface. The better plan is to gather them up and cart them away; then on the first dry day lightly hoe the beds and borders again, which will destroy the small seedlings just springing up and will loosen the soil sufficiently to allow the air to penetrate it.

The work in the kitchen garden department is also pressing on every hand. Asparagus beds have to be hand-weeded; Onions, Parsnips, Carrots, Beet, *Scorzonera*, *Salsafy*, &c., must be kept thinned to distances varying from 9 inches to a foot apart. Another sowing of Carrots may be now made of James's Intermediate; these will make in most gardens useful roots by autumn. Earth-up the remainder of the Potatoes, and draw the soil to and stick advancing crops of both Peas and Scarlet Runners. Make another sowing of Dwarf French Beans, they will be found very useful for a late supply. Regulate the growths of Vegetable Marrows, and train and stop Tomatoes just above the bloom. Fill every vacant spot with Brussels Sprouts, Savoy, Broccoli, and other winter vegetables, so that there may be no falling-off in these in the autumn and winter months. Maintain supplies of Lettuces, Radishes, and other small salads by sowing frequently, transplanting and tying them for blanching as required.

All plants such as *Spiræas*, *Deutzias*, *Richardias*, *Schizostylis*, *Lily of the Valley*, &c., that have done service in the conservatory are the better for being turned out of their pots and transplanted in rows or trenches in an open piece of ground, and must be well supplied with water throughout the summer months; they will then make fresh strong growths, and can be lifted to do duty another winter. Roses in pots that have done flowering should have the soil shaken from their roots and be repotted again in a good mixture of loam and manure. Place the plants out of doors

with the pots plunged in cocoa-nut fibre or any other material; with the assistance of water during dry weather they will do well until the fall of the year, when they may be pruned for forcing again.

## WORK FOR THE WEEK.

### FRUIT HOUSES.

**Vines.**—The weather we have had lately—dull, with occasional gleams of sun—is the worst that can be for scorching and scald. The best preventive of both is a rather high night temperature, early ventilation by day and a little at night. It is not desirable to close early at this critical period, but do so carefully, and as the liability to scald does not extend over more than ten to fourteen days particular attention should be given to ventilation. Grapes colouring should have plenty of air, a little fire heat being almost a necessity with a view to promote a circulation of rather dry warm air, and to secure the perfecting of the crop. To late crops swelling their fruit give abundance of liquid manure and plenty of atmospheric moisture. A sprinkling of guano on the borders both inside and outside and washed in will be of service against red spider. If not already done complete as soon as practicable the thinning of late Grapes, and as they will have to hang through the winter they require thinning well or they will not keep, especially when cold accompanied by damp has to be contended with. Keep the Vines free from all gross lateral growths, not allowing them to make strong entangled growth, and have to remove them in great quantity. Early Vines from which the fruit has been cut must be well syringed every evening to preserve the old foliage as long as possible in a healthy condition, for when the foliage goes off early from red spider or other cause second growth not unfrequently sets in when they ought to be going to rest. Attend to the requirements of young Vines, watering liberally at the roots with tepid soft or pond water, and maintain a moist atmosphere by frequent sprinklings, syringing at closing time, which do early so as to secure a good moist heat without having recourse to artificial heat. Pot Vines that have completed their growth should now have less moisture, syringing being discontinued, and the supply of water at the roots moderate, air being freely admitted, and afford the principal foliage all the light practicable.

**Figs.**—The first crop in the early house will be all gathered, and more moisture in the atmosphere will be desirable; therefore resume the syringing of the trees twice daily, and the sprinkling of the house as advised before the colouring of the fruit commences. The thinning of the fruit, if plentiful, must be free, reserving those which are nearest the base of the shoots. Tie in the growths to the trellis as they advance, stopping or removing such as are not required, regulating those retained so that they may receive the beneficial effects of light and air to mature them perfectly. Do not allow the trees to suffer by want of water; those in pots or planted out in borders of limited extent will require water frequently, affording on every occasion a little guano mixed with it. Where crops are ripening constantly maintain a free circulation of dry warm air, which is essential to the Figs ripening perfectly. Trees in pots required for early forcing must not be neglected for syringing overhead occasionally, attending with regularity to the watering, supplying with liquid manure on every occasion.

**Peaches and Nectarines.**—So soon as the fruit is all off the trees in the earliest houses attend to syringing so as to dislodge red spider, the garden engine in the case of large houses being the most effectual. In case of the lights not being moveable so as to allow of the trees being exposed to rain, the inside border must not be suffered to become dry, but have a good watering as required so as to reach the roots, and if a little guano water is afforded it will assist in the trees forming plump flower buds. In succession houses where the fruit is making its later swelling the syringe or engine must be applied vigorously to keep red spider in check. Afford abundance of air in favourable weather, closing rather early so as to economise heat. In the case of red spider obtaining a hold apply an insecticide, as it is important that the foliage be clean right through the season or the fruit will not swell off well, and the effect upon the trees in the future is most disastrous. Keep the shoots tied down as they advance, and thin out those that are superfluous, pinching the laterals on the strong shoots back to one joint. Should mildew appear on the foliage or fruit sulphur must be sprinkled over them, discontinuing syringing for a time.

**Orchard House.**—The different kinds of fruit trees in this structure will by this time have had the fruit carefully thinned wherever necessary, and they will be rapidly swelling off the portion left for the crop. To encourage the swelling of the fruit as much as possible the trees should have liberal treatment, such as rich mulchings and liquid manure, but it must be regulated according to the vigour of the trees and the crop they are carrying; those vigorous and carrying only a moderate crop will need less mulching and less frequent supplies of liquid manure than those more or less moderate in vigour and carrying a heavy crop. A genial atmosphere must be maintained by brisk syringings every evening when the weather is warm, closing the house somewhat early

when the air is cold, giving less ventilation when the wind is boisterous than when warm and mild. When the weather is warm the ventilators should be open at night as well as by day. The trees will require to be frequently examined for disbudding or pinching back strong growths with a view to keeping the trees in proper form, avoiding, however, very close pinching in the case of vigorous growers, as it only provokes secondary growths, and too great denudation of foliage at one time is more likely to cause an unhealthy condition of the trees than to favour their fertility. The earliest kinds of Cherries will be nearly ripe; syringing in their case should cease or the fruit will crack and be spoiled, indeed syringing should be discontinued so soon as the fruit shows colour. It is important that the trees be kept clear of insects, especially black aphides, which not only injure the tree but render the fruit unfit for use. Fumigation is the best remedy, but if there be no need to fumigate the whole house the trees may be removed, if in pots, to a separate structure. It will answer to apply an insecticide in the evening, and the following morning giving a washing with the garden engine. Birds must be excluded by placing some netting over the ventilators. Fig trees in pots now approaching the critical stage should, to prevent the fruit dropping, be liberally supplied with water, and every care taken to prevent a check. The points of the strong-growing shoots should be pinched out; weak and unnecessary ones should be rubbed off altogether, allowing no more foliage than can be fully exposed to light and air. In most orchard houses a Vine is grown, a single rod being trained over the pathway to a wire with one on each side for training the shoots to; the shoots produced by the rod should be stopped one joint beyond the bunch (if no fruit appear at the sixth leaf), securing them to the side wires, and the laterals being pinched back to one leaf but little shade will be thrown on the trees, the Grapes produced having a pleasing effect as well as being useful, especially where there is no other convenience for growing them. The bed or border in which they are grown will need copious supplies of water, especially if inside, and some liquid manure occasionally.

**Cucumbers.**—A few seeds may now be sown for late summer and early autumn fruiting. They will germinate, and the seedlings be fit to plant out in about a month. Attention must be given to plants in full bearing by way of thinning out the exhausted growths and foliage, laying in young bearing wood, stopping one joint beyond the fruit, and earthing up the roots periodically. Copious supplies of liquid manure will be required about twice a week or as may be necessary, but avoid applying it too strong, syringing at closing time, and maintaining a good moisture all day by sprinkling every available surface as necessary, but more frequently in hot weather than when dull. Do not overcrop young plants, and do not allow the fruits to hang too long, as upon attention to this depends in a measure a good and continuous supply.

### FLOWER GARDEN.

The success of carpet bedding is more due to its being well kept than to elaborate design. The lines, divisions, and groundwork should be kept well defined. To insure the covering of the ground quickly peg such plants as *Alternantheras*, press down *Sedums*, and pick off flowers and pinch *Antennarias*, *Cerastiums*, and *Golden Feather Pyrethrum*. Peg down *Gnaphalium*, *Iresines*, and *Coleuses* to insure their spreading quickly, also *Verbenas*, *Petunias*, *Lantanas*, *Nasturtiums*, and *Lobelias*, encouraging them in every way to cover the ground as quickly as possible. Should the weather set in dry afford abundant supplies of water, or they will soon curl and fade in colour. Subtropical plants can scarcely be over-watered provided the weather be bright, mulching them with well decomposed manure, and stake and tie as they advance in growth; *Hollyhocks*, *Dahlias*, and other vigorously growing plants should be treated in a similar manner. *Pinks* and *Carnations* should be neatly staked before they get too forward. Push on the propagation of these by piping and layers, making choice of a half-spent hotbed on which to place the handlights to contain the pipings, inserting them in sharp sandy loam, and keeping them well shaded from the sun, sprinkling gently occasionally so as to keep the atmosphere moist. Cuttings of *Roses* root freely at this season; make them from well ripened wood, and treat them as advised for striking *Carnations*. *Briar* and other stocks will shortly be sufficiently forward for budding. In performing this operation make choice of buds on wood that has just borne flowers, as these are not only mature but preferable to the large immature buds obtained from the quick-grown barren shoots. In extracting the wood from the bud care should be taken that the bark is not bent back too sharp or bruised in any way, as when that is the case the bud is certain to turn black and fail. Herbaceous *Lobelias* throwing up their flower stems should have supports and be well supplied with water. The *Monkey Flower* or *Mimulus* make grand beds with their singularly shaped brightly coloured flowers and rich markings, and with a mulching of partially decayed leaves in winter are as hardy as *Mint*, blooming in early summer and continuing for a long time if well supplied with water. The herbaceous borders will now be very interesting, and should have attention in staking and tying such as require it and in keeping down weeds.

## TRADE CATALOGUES RECEIVED.

W. Dobbie, Faversham.—*A List of Geraniums and Fuchsias.*  
 W. Lovel, Weaverthorpe, York.—*A Select List of Strawberry Plants.*  
 Wm. Cutbush & Sons, Highgate.—*Autumn Catalogue of Bulbous Plants.*

## TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense. Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (W. H. B.).—Messrs. Chambers publish an "Introduction to Botany." You can see its full description in their catalogue of books. (J. G.).—We do not know of any cheap volume published such as you appear to require. Messrs. Cassell & Co. are issuing a work in numbers which might be useful to you.

PEAS UNHEALTHY (M. M.).—Excessive wet is the cause of your Peas being so unhealthy, and they are also much injured by snails. Probably the Peas are, or were, too thick in the rows. Finer weather is the only remedy now. The Fern, which arrived much crushed, appears to be *Onoclea sensibilis*.

YOUNG GARDENERS FOR INDIA (B. Young).—We think they are eligible for the duties you name at eighteen years of age.

WATER-TIGHT STOP-COCKS (J. M. K., M. D.).—Foster and Pearson's patent throttle valve will suit you: it is a very simple and effective one.

BEETLES ATTACKING ROSE BUDS (Dunkeld).—The name of the beetle which is destroying your Rose buds is *Anisobea horticola*, the magrots of which live under the ground and feed on the roots. The only certain method of eradication is by hand-picking.

PRACH LEAVES BLISTERED (Remeilhe).—The blister is caused by cold and occasionally destroys the tissue. It is incurable, and you can only remove all the worst leaves and trust that the growth now made under the influence of warmer weather will be clean and healthy. See Mr. Luckhurst's notes on page 483 of our last week's issue.

REMOVING FRUIT TREES (W.).—No fruit trees or bushes, though planted by the tenant, can be removed legally unless the landlord's permission has been obtained previously. So many circumstances have to be considered that unless you obtain the landlord's permission you had better consult your attorney.

SUMMER-PRUNING DWARF APPLE AND PEAR TREES (Armiger).—The shoots upon the main branches should be stopped at the fourth leaf and the terminals at the sixth, repeating if necessary. See last week's "Work." Gooseberry and Currant bushes may be pinched when the fruit is ripening, but if done previously so much the better. Salt for walks to destroy weeds may be had of any agricultural manure dealer.

REPORTING CHRYSANTHEMUMS (J. P. Y.).—The plants being forward and strong we should shift them from the 8-inch to 10-inch pots, merely removing the drainage and the surface soil and potting rather firmly. The season is too far advanced for reducing the balls, though that may be done to the extent of about an inch all round, returning the plants to 8-inch pots, and standing them under a north wall or in the shade until they have recovered from the effects of potting, when they should be placed in an open situation. Do not stop them, but tie the shoots well out, thinning out the weaker ones in case the plants have been kept over from last year. Do not allow them to want for water, and supply them with liquid manure at every alternate watering.

WORKWASTE ON LAWN (J. R. C.).—Place a peck of quicklime in thirty gallons of water, stir well up, and allow it to stand two or three days; then water the lawn thoroughly with the clear lime water. The worms will come to the surface, when they may be swept up and cleared away.

VINE LEAVES SCALDED (W. A. B.).—The spots on the leaves are scorched, which may be obviated by admitting air more freely, especially during the early part of the day, with the top ventilators open about an inch at night. The Vine with the stem showing signs of cracking is only a result of the increasing thickness of the rod or cane, and will not in any way affect next year's fruiting.

PINCHING VINE LATERALS (F. I.).—The laterals should be stopped at the first leaf, and the succeeding growths likewise, the leading shoots being stopped at the top of the poles.

BORING FRUIT TREES (Idem).—The boring to be effectual must be large—not less than an inch in diameter for trees of a foot diameter, but is not a process to be recommended, as it only tends to premature fertility and death.

ROSES FOR VINEY (G. Thomas).—If the Vines cover the roof so as to cause much shade beneath, Roses would not thrive. The most likely to do are *Teas*—viz., *Souvenir d'Elise*, *Sombreuil*, *Duchess of Edinburgh*, *Catherine Mermet*, *Marie Staley*, and *Niphetos*.

BUILDING A GREENHOUSE (Y.).—A lean-to for so narrow a house would be the most suitable, which you may have constructed as you desire by a local tradesman or horticultural builder. There is no objection to the ready-made houses, the price of which may be obtained on application to those advertising, stating what is required.

VINES UNHEALTHY (F. H. F.).—Without a line to guide us as to the age, history, or conditions of culture of the Vines, it is impossible to give a satisfactory reply to your question. The Vines appear to be growing or trying to grow in an ungenial soil, and the house has probably been kept much too close and moist. If all the bunches are like the one you have sent the crop is ruined.

CUTTING THE TOPS OFF TREES (S. M.).—Without knowing to what trees you refer, it is impossible to answer your question.

TREES AND SHRUBS IN FIELD (Flora).—Unless they are protected the pony will doubtless injure them considerably, and may also injure itself if it has access to Yew. The sprays sent appear to be of *Azalea amena*.

FRAGRANT ROSES (H. C.).—All the Roses you name possess fragrance but not so intensely as some other varieties. Your second question shall have our consideration.

MEALY BUG ON GRAPES (W. L.).—We pity you, but fear we are unable to render you any aid. Can any of our correspondents suggest a mode of clearing the bunches of Grapes from mealy bug? The plant is a *Tradescantia*, but we cannot determine the species from the specimen sent.

ANTS EATING ROSE BUDS (L. H.).—If you refer to page 447 in our issue of June 15th, you will find that we recorded an instance of ants destroying buds of *Marechal Niel* Rose that came under our notice during the present year. We are much obliged for the enclosure, which shall have our consideration; your request shall be attended to.

MELONS NOT SETTING (J. T. S.).—The plants are over-luxuriant. If you withhold water as you propose, and give the plants a partial but not excessive check, watering them when the foliage shows signs of flagging, and maintain a drier atmosphere, fertilising the blossoms, the fruit we think will set. The late dull and wet weather has been unfavourable to the setting of Melons.

RHODODENDRON EDGEWORTHII (Idem).—This plant is a native of the Himalayas, and requires an ordinary greenhouse temperature with a soil composed of lumpy peat and loam in equal parts, a little sand being added.

MELONS CRACKING (A. B. C.).—You appear to have done all you can to arrest the cracking, and probably the evil will not be so serious as you imagine. You grow the plants too luxuriantly in their early stages. We can only advise that you continue the treatment you have adopted. As soon as the fruit changes for ripening cut it and place it in a warm house, where it will complete the ripening process.

GRAFTING ORANGE TREES (A Young Gardener).—The present time is a suitable one for the purpose; but you must keep the plants in a moderately close house after the operation, shading them, and neither allowing the stock nor the material surrounding the scion to become dry. Ordinary whip or tongue grafting is well adapted to these plants. Be careful to insure a close union of the scion and stock, then tie with fine bast and surround the junction with clay or moss. Respecting the other question London's "Instructions for Young Gardeners" would convey the information you desire, or an elementary work on geometry would contain all particulars concerning drawing to scale.

TROPÆOLIUM SPECIOSUM (Marian).—Plant it in a moist and partially shaded position. It dies down completely, and requires no covering of ashes, being perfectly hardy.

BUDS OF MARECHAL NIEL DROPPING (G. F. Macdonald).—The cause of the buds dropping is probably a defective supply of nutriment in the soil. Give a top-dressing of well-decomposed manure, or water the plant frequently with liquid manure, and no doubt you will soon perceive a difference in the vigour of the wood and buds.

WEEDS AMONG VETCHES (R. C.).—The plant with which you are troubled is the common Corn Cockle, *Agrostemma Githago* (*Lycalis Githago*), the pest of corn fields. The seeds are small, black, and granular, and are reputed to render flour unwholesome when ground with it.

NAMES OF PLANTS (G. H.).—*Hippeastrum* (*Amaryllis*) *reticulatum*. (E. C. B.).—*Thalictrum aquilegifolium*. (B. Cowen).—1, *Iris biflorus*; 2, *Hemerocallis flava*; 3, *Melittis melissophyllum*. (E. T. S.).—1, *Iris Pseud-acorus*; 2, Probably an *Iris*, but too withered to determine; 3, *Viburnum Opulus*; 4, *Lilium pyrenaicum*; 5, *Pernettya angustifolia*; 6, *Kalmia angustifolia rubra*; 7, We think it is *Silene aconitifolia*, but the flowers were very withered. (H. R. C.).—1, *Saxifraga ceratophylla*; 2, *Resembles S. hypnoides*, but it had no flowers; 3, *Campanula trachelium*; 4, *Iris graminea*; 5, *Ornithogalum nutans*. The others were too withered to be recognisable. (James Boyd).—1, *Cerasus Padus*; 2, *Polygonum minus*; 3, *Euonymus japonicus latifolius aureus*; 4, *Thymus villosus*; 5, *Saxifraga hirsuta*; 6, *Berberis Darwinii*. (T. F. Simpson).—*Scilla amena*. (M. M.).—1, *Polystichum microcarpum*; 2, *F. angulare* var.; 3, *Cystopteris fragilis*; 4, *Lastrea dilatata*; 5, *Doodia caudata*. (H. G. M.).—*Hieracium aurantiacum*. (Mrs. Pade).—*Thalictrum aquilegifolium*. (W. W. A.).—1, *Asplenium marinum*; 2, *Asplenium inaequale*; 3, *Asplenium bulbiferum*; 4, *Polypodium calcareum*.

## THE HOME FARM:

## POULTRY, PIGEON, AND BEE CHRONICLE.

## SUBURBAN VILLA FARMING.

(Continued from page 498, vol. lxi.)

WE must now consider the numbers and kind of live stock to be kept on the suburban farm, and this will vary with the taste and fancy of the owner to a great extent. The situation and climate will necessarily have some influence in the choice of stock, particularly in the selection of cows. Horses, also, will generally be kept, probably three in number—a riding horse, also one for the brougham or wagonette, and one stout active animal for the farm and odd work. Pigs and poultry will also generally form part of the live stock. In the remarks which follow we must be understood as alluding to the extent of the villa, farm, &c., as twelve acres, in order that occupations of a greater or less extent may be managed accordingly with variations, and all matters relating thereto made suitable.

In referring first to the stock to be fed on the pasture we will consider whether the cows shall be kept to the tether and removed several times daily, or whether they shall be allowed to range at large on the grass. We should say that the animals look much more ornamental when they feed on the grass promiscuously than when tethered with only a limited range. When we require the animals to roam at large almost any cows of the smaller breeds will answer, but none will do so well tethered as the Jersey or Guernsey, because upon their native islands they are nearly always thus confined. Either of the following breeds will do well, and are also adapted for ranging the pastures. We will take the Jersey or Channel Islands cattle as a whole, and similar to these are the Brittany, then the Ayrshires and the Kerry, each of these being suitable for certain soils, climates, and ever-varying circumstances by which they will be surrounded.

We will therefore consider the advantages of the Jersey cows first, and there never has been a time in their history when they were greater favourites than at present, particularly in the suburban districts in the southern and midland counties, where they are kept and treated as pet animals, where only a few acres of grass land are held. As regards the colour of the Jerseys the fashion has altered greatly within the past twenty years, for whilst formerly they were most approved when they were spotted or patched with red, lemon, or black, with white ground more or less, nothing at present, however, is fashionable but whole or solid colours, either silver-grey, light red, or fawn colour. This question of colour is purely a matter of fancy or taste with those who value the animals as ornamental in their pastures; but when we refer to their value for profit, or as affording abundance of the richest milk, colour will not help us. The chief point we have to look at is the parentage or pedigree of the stock. There is, however, a very great difference between the Jersey cow of the present and when we first knew them. Great and successful endeavours have been made to improve their form and quality, so much so that a scale of points is aimed at by the breeders now which requires a cow to possess thirty points before it can be considered a perfect specimen of the breed. Formerly nothing but the milking capacity was looked to, and any ugly ill-formed animal with flat sides, high hips, and hollow back was appreciated as long as it yielded a large quantity of the richest and highest-coloured milk. In the breed approved at present we find the cows which are the greatest favourites are those with the fawn-like head, the soft and quiet eye, the elegant crumpled horn and small ears, and the well-formed capacious udder, yielding milk so rich with a deep tinge of yellow that it seems like that which is often sold as cream in cities. The pure bred Jersey cow is a singularly docile animal; the male, on the contrary, is apt to become fierce after two years of age. The stock bred in the island vary in hardihood, for those reared on the high and northern parts possess a hardness of constitution that enables them to withstand even a Scotch winter, whereas those bred in the low rich pastures of the island are of larger size but more delicate in constitution. The Jersey is, no doubt, the best family cow where they have only a limited grazing area, and they not only furnish under favourable circumstances from fifteen to twenty-five quarts of milk in twenty-four hours, but from 10 to 14 lbs. of butter weekly in the spring and summer months. To have butter in perfection when the cream is so rich it should be made every morning, at any rate it should be made every second or third day; besides butter, clotted cream made as in Devonshire, and also Bath and cream cheese, are luxuries which may be obtained in perfection from these cows when fed for the purpose.

The Alderney breed of cattle are so nearly allied to the Jersey that they are often sold by the dealers as Jerseys. There is, however, a distinctive difference in the Guernsey breed, for they are larger animals, carry more flesh, do not give so much milk as the Jerseys, but their milk is so extremely rich in cream, and so high coloured, that the butter in hot weather is very difficult to make up into printed half pounds. We once had a dairy of all Guernsey cows, but we were obliged to sell some of them and take up some

Jerseys, as the cream in hot weather was more like oil, and the butter when made was more the colour of beeswax than the light yellow tinge peculiar to Jersey butter.

In continuation of our subject we must notice the Ayrshire cow as the characteristic dairy breed of Scotland. She is a model animal, furnishing the ideal form of a miniature butter-making cow. She stands on short legs and is long and well built in proportion to her height. As compared with the Jersey she is coarse in the head, and long and strong in the horn, and usually of a mixed colour of white with red, light brown, or black spots. They are of a hardy habit and large milkers, yielding a good proportion of rich cream.

We can only find space to notice one more breed adapted for villa farming—viz., the Kerry cow, an Irish native animal, yet appreciated in various parts of England and Wales, being very hardy and well suited to the cold pastures of the Wealden districts of England. One of their characteristics is a self colour of either red or black, and in proportion to their size they yield a full quantity of rich milk. They do well and maintain condition on the poorest pastures. Their outline is regular, with rather coarse head and short straight horn, when compared with the handsome head and well-turned horn of the Jersey cow.

We have dwelt rather at large upon the merits of the cows we consider most worthy of attention in connection with our subject, as being essential to the customary mode of villa farming. In their management it may be advisable in those cases where only two or three acres of pasture are available to have the animals tethered, but practically it is wrong where four, or five, or more are kept, as the labour of shifting the tether four or five times a day is inconvenient. Unless we take Jersey cows from the island, or from where they have been broken-in to the tether, they would for some time prove restless enough to interfere with the supply of milk. We, therefore, recommend the roaming-at-large mode of feeding as being the best economy, especially if the grass land is well fenced with moveable and stout iron cattle hurdles, or a fixed strong flat or round hollow-barred fence of iron. We object entirely to wire fencing, as being not only insecure but dangerous to the cows, and constantly requires repairs. We have in years past erected a great deal of wire fencing, we now prefer only the firm barred fencing; although more costly at first it is cheapest in the end, and also safe fencing for either cattle or horses, the latter more particularly.

We wish now to consider the mode of feeding, &c., of the cows both in winter and summer, and before concluding our subject to consider the mode of providing for cows, horses, and pigs at the farmery, both as to buildings for their accommodation and other matters incidental to the proper and economical conducting of a villa farm. We will first allude to the fact that we can very well maintain four cows of either of the small breeds named upon the twelve acres of land, also three horses, and a number of pigs and poultry varying according to circumstances and the wish and intention of the owner, purchasing only some hay, straw, and some of the various kinds of feeding stuffs for cattle and corn for the horses, because upon the mode of conducting the land we have set forth no cereal crops will be grown. It will be necessary in order that the supply of butter, milk, &c., shall be available all the year through, that the cows must be brought in to calve at spring, summer, autumn, and winter. It is only under peculiar circumstances that we can recommend the keeping of a bull at the farmery, particularly of the Channel Islands' stock, as they are very troublesome and sometimes dangerous. Still, where there is no bull at hand anywhere in the neighbourhood, it is somewhat imperative, unless the cows are sold out at the end of the milking season and a purchase made of in-calf cows, to maintain numbers intact. All the best milking cows should give milk up to within about a fortnight of calving again, for it is not only a great loss where cows are allowed to go dry for two months or more, but when the animals are well fed with the best of materials they are apt to accumulate fat internally, which is very often attended with serious consequences, such as parturient fever, &c.

(To be continued.)

#### WORK ON THE HOME FARM.

*Horse Labour.*—On account of this being in arrears, owing to the wet weather in the latter part of May and early part of June, the pressure of horse labour comes now inopportunistically during the period of haymaking, stacking, &c. This not only delays the preparing and drilling the land for root crops, but seriously interferes with the important work of securing the hay crop. There is, however, a rule which we have often acted upon in case the seeding for root crops came at the same time as securing the hay; that is to work the horses in ploughing, harrowing, and drilling the seeds of Swedes or turnips in the mornings up to midday, and then in the afternoons to put all horses and men to carting and stacking the hay. There is a double advantage in this arrangement, because the morning part of the day is best for the root cultivation, and the after part of the day is most suitable for stacking the hay crop. At least, this is the case in hot, dry, settled weather, for when we have been cultivating and drilling the seed of root crops in a dry time we have kept drilling done



close up to the ploughing, and we have even noticed instances where one ridge has been left undrilled when the men and horses stopped for luncheon and baiting in the middle of the day the seed would not vegetate, and proved the only failure of the root crop in the field; therefore the work of drilling should always be effected close up to all the land ploughed. Again, as regards the question of hay carting, it is very rare indeed that we find the hay in such perfect condition for stacking in the morning as it is in the afternoon, and it should be still further arranged if possible that the pooking or rowing-in of the hay should only be done just before the carting, in order that it may go into the rick hot and dry. It seldom does so well in rick after being in pook one day or more before carting, because even in the best and finest of weather the dews at night affect the condition of the hay in a greater or less degree. In the case of showery or uncertain time as regards the weather of course the above statement will not hold good, because the seeds of turnips would be sure to vegetate at any time of sowing; and as regards the hay in such weather it would be wise to stack the hay when fit, and not risk it by doing half a day's work when a whole one could be done with advantage.

**Hand Labour.**—This, during the haying season, is valuable whether it rains or shines, because there is always work to be done. In showery weather there is the mixing and preparing with ashes the artificial manures for drilling with the seed for root crops; then, again, straw may be drawn and heaped up ready for thatching the hayricks, the fetching of bays or faggots for making rick stands. The trimming of quickset hedges, too, about this period should be done for the first time whilst the young shoots are soft, for no hedge can be so well or properly trimmed if left until the autumn time of year, when the wood has become hard. The question of overtime with the workmen and farm labourers is very important, and an agreement with them by the home farm manager should be quite understood, in order that there may be no excuse for delay in the work or attempt at a strike for better terms. In the present temper of the working men in some districts it is very desirable that not only liberal wages should be given, but a well-defined agreement as to working overtime either for food and drink or extra wages. The hand-hoeing of mangold, Swedes, early turnips, &c., will be going on at every opportunity, and in order to effect this the work should be done by the acre, so that the men may lose no opportunity of working long days or parts of days. This will not only enable them to keep the work of hoeing done whilst the root crops are the right size, but also encourage the men by enabling them to earn more money, with the further advantage of employing their wives and children in singling the plants behind the hoers. The home farm dairy cattle will now require extra attention from the fact that cows in milk suffer greatly not only from any excessive heat of the weather but also from the annoyance of flies, and unless the meadows and pastures are peculiarly situated—such as those on the salt marshes near the sea or on high and exposed situations—they are sure to suffer more or less from these causes. The cattle should, when the sun is unusually powerful, be taken to the homestead into their shaded stalls or sheds from ten o'clock till four in the afternoon, and receive in their manger or racks a bait of green fodder, such as vetches or clover, lucerne, &c. Where animals are allowed only the pasture produce, and are subject to the teasing of flies, it is sure to result in a diminished quantity of milk, which further leads to the shortening of the milking period—a matter of no slight importance, and these two points together when properly considered will show that the expense or extra labour incurred will be amply repaid.

### THE INTERNATIONAL AGRICULTURAL SHOW AT KILBURN.

It may not be without interest to our readers to learn that Dr. Hogg's Kerry cattle, figured on pages 488-9 last week, have taken a creditable position at this great Exhibition. The bull, La Mancha, obtained the second prize, and the cow, Fair Ellen, was commended by the Judges in a class numbering twenty-nine entries.

The Exhibition is on such a scale of magnitude and completeness, is so varied and instructive in the several sections, that all who have an opportunity of visiting it should take advantage of the first fine day for doing so, for, as the Prince of Wales observed at the Show on Tuesday, there does not appear to be any certainty of the weather continuing fine for more than twenty-four hours together during the present extraordinary season. In every section but one the entries are more numerous than they have been at any previous show of the Royal Agricultural Society; and, as observed by a correspondent, a much-neglected branch of the home farm is admirably represented—namely, English and foreign goats, the former excelling the latter both in quality and numbers.

A striking feature of the Exhibition is the imposing display of seeds, roots, &c., arranged by such great seed firms as Messrs. Sutton & Sons, James Carter & Co., Edward Webb & Sons, and

others, which represent in a remarkable manner the magnitude of the industry in this important branch of agriculture.

We can only at present refer to the following awards. In the competition for market gardens exceeding ten and not exceeding twenty acres in extent, and situated at a distance of not more than twenty miles from the Mansion House, Mr. W. Gay of Axe Street, Barking, is awarded the first prize of £50, and Mr. W. J. Gay of Corbetstye, near Romford, the second of £20. They were the only competitors. In the competition for market gardens of over fifty acres, and also within twenty miles of the City, there were again but two entries, the first prize going to Mr. Lancaster of Canning town, Essex, and the second to Mr. Patch of Faircross, Barking. There was a fifth class for market garden farms—on which market garden crops alternate with farm crops—above a hundred acres in extent, and here again there were only two entries for three prizes. The trustees of the late Mr. Circuits, at Rainham, and Mr. Glenny of Cecil House, Barking, were awarded the first two prizes. The Show ground is very imperfectly drained.

### CANARY TREATMENT.—No. 6.

THE offspring of London Fancy birds when chipped very much resemble those from the Lizard breed, but when they become clothed with their nestling feathers are more the colour of young brown Linnets, excepting that the tail and wing feathers are much darker. These latter feathers are retained during the period of moulting off the whole of the dark body feathers for a garb very different indeed in appearance, that of a rich orange colour. But like other Canaries there are two classes—Jonque and Mealy—and unless they are well moulted in box cages do not possess great depth of colour or silkiness of feathers. No other Canary undergoes such extraordinary changes in the plumage as do the London Fancy birds, for not only do they turn from a dusky plumage to a rich orange colour, but after the first year's moult they likewise lose the black feathers of wing and tail, which become somewhat grizzled in appearance. At this stage they are considered not in form for exhibiting, or, as a fancier would say, "out of feather." Many of the young from this breed possess light or foul feathers in wings or tails, but even if the stalk of the feather be dark or partly so it is counted as a dark one. It is only such feathers which are clear in stalk and webbing that are looked upon as being foul. There is a vast amount of artificial treatment exercised in bringing out the best birds. To judge of the respective merits of really first-class specimens at a show the birds should be handled, this being quite necessary in discriminating betwixt birds which so much resemble each other.

Lizard Canaries, although of a dark golden or silvery plumage when matured, differ much from some other young birds when chipped. Their skins have a flesh-coloured appearance when first hatched, but in a few days a perceptible change takes place, dark pin feathers soon budding forth excepting in the caps or crowns of the birds, which in perfect specimens should be regularly and entirely light over the entire crowns, extending to the eyelids (which should be dark) and to the back of the head, but not on to the nape of the neck. The head of a Lizard bird is a most important point, for it should not only be large but the crown should be broad, so as to more fully develop the cap. The face of the bird—that particular portion of it between each eye and the beak—should be clothed with dark feathers; if otherwise, or should be what is termed "bald-faced," it much deteriorates the value of a good specimen.

Lizards, like many other birds, breed some of their stock with blemishes, understood in Canary circles as "pile feathers" or "broken-capped." It is, I know, by many breeders considered an achievement to breed a Lizard or two sufficiently good to come under the denomination of a perfect bird, first-class all-round specimens being somewhat scarce. However good the parent birds may be, still some of the offspring are foul-feathered. In days gone by many breeders of Lizards used to destroy the foul-feathered young and only preserve those approaching perfection. I once heard a fancier assert that he could always breed perfect birds, but the fact afterwards came to my knowledge that the imperfect marked birds were killed off. I have bred Lizards a good few years, and from the very best strains I could obtain now and then foul-feathered birds would crop up. I recollect when it was first mooted that there should be classes established for broken-capped Lizards the matter met with much abhorrence, but the objectors did not prevent the introduction of the classes into the best schedules issued from various parts of England. The matter has effected one beneficial thing to breeders, that of opening up a market for the sale of broken-capped birds, which will tend to partly recoup breeders for their trouble, besides affording an opportunity for such birds to be exhibited in classes for prizes; and not only that, but the provision afforded at shows for such broken-capped birds has done more in breaking the neck of a system of cheating practised in trimming-up indifferent-capped Lizards so as to make them pass as perfect-capped birds.

After Lizard birds have been well reared it is better either to keep them in separate partitions or cages, or moulting them in a spacious well-ventilated attic or suitable room where there is a

snug corner or so in a state of semi-darkness for the birds to retire to. Never fix perches so that they cross each other. If you keep your birds together in cages or in a very light room so that they can notice any little blemish in each other's plumage—such, for instance, as the budding forth of new feathers, you will thus encourage a system of plucking, which mischief when once begun becomes a habit. In this way many a promising young bird has been spoiled in appearance of plumage. No greater eyesore can present itself than to see a well-defined spangled beak of a choice bird marred through a feather or two in the wings being tipped with white, the result of plucked and fresh-grown feathers. The best way to keep the plumage in close order is to let the birds have plenty of cold water to splash in.—GEORGE J. BARNESBY.

### VARIETIES.

We are glad to see an excellent regulation in the Royal Agricultural Show at Kilburn. Exhibitors are prohibited from placarding their goods with certificates of prizes gained all over the world, which often proves so misleading to purchasers. The only prize cards allowed to be posted are those awarded by the Royal Society itself. This good example might well be followed by the managers of many other shows, not omitting poultry shows. We have often seen pens covered with the placards of rival vendors of poultry foods, and have known them placed over birds which had never tasted the articles in question, with the impertinent assertion that they had been "reared and fed" upon them.

—We hear that a most interesting innovation is to be tried in the awarding of prizes at the second Hemel-Hempstead Poultry Show to be held the first week in October. The various sub-varieties of each breed are all to be shown in one class—e.g., Dark, Silver-Grey, White, and Cuckoo Dorkings, arranged together according to their colours, will make up the Dorking class; Buff, Partridge, Black and White, the Cochin class, and so on. The Judges will first place in order of merit three pens from each sub-variety, which will have honorary prizes or cards of honourable mention; they will then select from these pens with honorary distinction the three best pens in the whole class for the three money prizes. The scheme strikes us as a very good one: where several sub-varieties are mixed up in one class, and those of the same breed perhaps far apart, a judge often finds it extremely difficult to place them to his satisfaction, and a good deal must naturally depend on his personal fancy for some particular colour. Under this system the genuine fancier (as distinguished from the pot-hunter) will have an opportunity of testing the merits of his birds according to their varieties as well as according to their breeds, and will in many cases be pleased with a distinction, though it be only an honorary one. We think that the fancying public is much indebted to the promoters of this Show. Last year the great tournament of incubators was originated by them, which has resulted in the superiority of the machine of one maker over all others being for the present fully established, however much future improvements may alter their relative positions. This year this new method of awarding prizes is to be tried, and we are very sanguine that it may prove the solution of certain difficulties in judging. Of course it will at first entail a good deal of trouble on those not accustomed to it, both secretaries and judges; but we know that the Secretary's office at Hemel-Hempstead is managed in most methodical style, and we are informed that the staff of Judges will be large enough to prevent their task being at all onerous.

—We have received the schedule of the Poultry Show of the Cambridgeshire and Isle of Ely Agricultural Society. It will be held at March on July 23rd and 24th. There are nineteen classes for poultry, nine for Pigeons, and six for Rabbits. Among the rules we notice two good ones—viz., "No one will be admitted whilst the Judges are making their awards except the Stewards, who are not exhibitors;" and—"The poultry must be *bona fide* the property of the exhibitor at the time of entry."

—We have also received the schedules of the Winslow Floral, Horticultural, and Poultry Society, which will hold its annual show on July 24th. There are twenty-one open classes for poultry, also three local classes. Special local prizes are given for dead fowls, Ducks, and Pigeons suitable for the table, and for a dish of new laid hens' eggs. The five classes for Canaries are open. We are glad to see now in almost all schedules the clause adopted—"Several pens of poultry may be sent in one package provided they are properly labelled and divided." Much expense and trouble is thus saved to exhibitors.

### MODERN BEE MANAGEMENT.—No. 12.

#### THE NON-SWARMING SYSTEM.

BEFORE the main honey harvest commences every bee-keeper should decide on his course of action, according as increase of stocks, or honey results, or both are his object. The usual unfortunate occurrence of the swarming mania, and a great honey yield simultaneously, render such a decision absolutely necessary

if all is to go like clockwork, hives or supers or both all prepared for use at a moment's notice. His choice lies between three alternatives—viz., to allow unlimited swarming either natural or artificial, to prevent it altogether, or to control it to specified limits. Those desiring increase of stocks alone may either leave the matter to Nature and get their stocks trebled by natural swarming or multiplied sixfold by artificial, but their honey results cannot be large. Those desiring the largest results in honey may adopt either of the other alternatives—absolute prevention, or strict limitation of swarming. It is undecided which of these two methods will yield the greater results in honey—non-swarming hives have in this quarter yielded from 100 to 170 lbs. of super honey in good seasons, but whole apiaries on the limited swarming principle have averaged 70 to 80 lbs. on the number of stocks at the commencement of the season. The former results look dazzling beside the latter, but when it is remembered that these results were only obtained from particular stocks managed with considerable difficulty, while alongside of them were others in which the non-swarming system completely failed, it will be easily understood why in both cases the average yield per stock should be, as they in fact have been, pretty nearly equal. After practising both systems for several years my conviction is decidedly in favour of allowing a certain limited amount of increase, more especially as, being more natural, it is attended with less difficulty. However, most of our apian societies offer tempting prizes for the largest harvests of honey obtained from single stocks, and this is useful as exhibiting the grand capabilities of a stock of bees under skilled management, but in most cases it is thoroughly misleading. None but the bee-master knows the amount of trouble he has had in obtaining such results, not, it may be, with the particular stock that headed the list, but with the six or eight others that fell behind in the race, and perhaps broke down so far as the system was concerned, became unruly, sullen, determined to be bound by no such unnatural rules as their owner would impose upon them.

For the benefit, however, of those who may desire to try the non-swarming system I shall briefly describe the method I have followed for the last three years. In early spring I selected certain stocks for the purpose, and fed them gently but continuously on candy or liquid food. As soon as brood was found on three or four frames, if the weather were warm I spread these so as to make room for an empty comb in their midst; every five or six days this process was repeated. The combs for this purpose were simply the outside combs of the same hive, provided they contained little or no drone cells, the sealed honey they contained being uncapped with the knife before inserting them. As the stocks became stronger sheets of foundation were given instead, and any outside combs with many drone cells were removed. The selected number of six or eight was reduced several weeks before the time for supering by neglecting all those the queens of which gave evidence of not been able to stand this forcing system, and those only were further dealt with in which queens could keep pace with the accommodation so provided. About this time I usually gave up the feeding, and simply stimulated by uncapping portions of the sealed comb every day or two. As soon as the hive was crowded with bees I gave it a thorough overhaul just before placing on the supers. I uncapped all the remaining honey and placed all combs containing little or no brood right in the centre. Next to these were arranged those with sealed brood, and on the outside those with eggs or newly-hatched larvae. The object of this operation was to insure that the queen should have every inducement to continue laying, and that no honey could possibly be stored in the outer combs for almost three weeks while these eggs were being hatched out. The supers were immediately placed in position, and under the excitement and warmth caused by so much honey being uncapped below the bees usually took possession at once, and being gorged with honey soon set to work building comb or extending the guides of foundation. At first considerable attention was needed to keep the supers close and warm, but after a few days, as the population increased, all unnecessary wraps were removed and the hive entrance gradually enlarged, so that there might be free ventilation throughout, and the hive was shaded from strong sunshine.

The population of a stock managed thus attains enormous proportions and will throw swarms, if allowed, weighing from 7 to 9 lbs. But under the combined conditions of shade, ventilation, room, and laying space for the queen, they rarely as yet attempt to swarm. The trouble comes when the first or second tier of supers is becoming filled with comb, and honey is coming in faster than combs can be built to contain it. Every empty cell in the hive below is pressed into use for its temporary accommodation; the bees can only cluster in the narrow spaces between the now bulging combs, the queen is becoming pressed for want of cells to lay in, and altogether the conditions seem to necessitate swarming. In the nick of time, however, another tier of supers is added, and the cluster of bees at the doorway are enabled to get inside and find work there. A few hours' delay may, however, have led to the starting of royal cells, and in spite of extra super room a swarm pours forth on the appointed day. This might have been prevented by extracting the honey from the heaviest of the combs,

but we were loth to remove the 40 or 60 lbs. of supers to get at the frames below, and so our swarm is in the air. "Well," we say, "it must just go back." Securing it in the usual way in a temporary skep we go to the now half-deserted hive, remove the supers, lift out the frames, cut out every vestige of a royal cell, extract two or three combs and place these or sheets of foundation near the centre, replace the supers, giving more room if necessary, and tumble the swarm down at the door.

By paying closer attention to the necessary conditions I have generally been spared the trouble of this operation a second time; in some few cases no attempt was made to swarm at all, while in others nothing that I could do would prevent it. I have taken away eight out of ten combs, placing sheets of foundation in their stead, yet the bees swarmed again next day, not even leaving royal cells. I have raised the whole hive half an inch from the floorboard, and given tier above tier of empty supers, yet the mania was uncontrollable. In one case where nothing else would do I removed the old queen and replaced her by one newly fecundated, and I am of opinion that this will generally end the trouble. On the whole, however, I have come to the conclusion that the non-swarming system rigidly enforced is an impracticability. The plan of limited swarming I shall describe in my next.—WILLIAM RAITT, *Beecroft, Blairgowrie*.

### THE BEE TENT AT KILBURN.

THE energy of the Secretary of the British Bee-keepers' Association (the Rev. Herbert R. Peel) and of the Committee has secured a place for the industrious insect at the Exhibition of the Royal Agricultural Society, this year held at Kilburn.

The Exhibition was honoured at a quarter to one on the morning of Monday by a visit from H.R.H. the Prince and Princess of Wales and the Royal children. They were duly received by the Secretary and Committee, and with much apparent interest listened to short explanations. The Princess and her family seemed especially delighted with one of the queens in an observatory hive, which at the moment of their passing happened to be posed as she is sometimes represented, but rarely seen, with her retinue of workers all standing head towards her.

A tent of 120 feet in length, running by the side of the Hampstead Junction Railway, has been erected and decorated tastefully by escutcheons and banners. On the left as we enter we find a miscellaneous collection of appliances, English and American. Amongst the former is a case illustrating all the varieties and stages of cells, stores, and bees the hive can under any circumstances exhibit. The Americans contribute to this counter, amongst well-known knickknacks, the Bingham smoker; small perforated boxes carrying a supply of maple sugar for conveying queens by post; sections in varied forms, but not now novel. Honey by English producers in sections, and therefore in saleable form, next attracts attention; but here in quantity and appearance we are distanced immensely by America, Mr. Thurber showing no less than 1½ ton in section boxes of 2 lbs. each. The colour of this honey is not to be excelled. It is sealed throughout, and as flat as a marble slab. Respecting its quality opinions differ. Here, the crucial point, England will probably be well able to hold her own; while there is no reason that in flatness, and generally speaking in colour also, we should not run abreast with the best American producers. These sections we commend to the attention of all who would enter the honey market. The tin separator has had hitherto almost all to do with the flatness of the comb, but with this exhibit is shown a specimen of cardboard which must, we think, supersede tin, and which is therefore worthy of careful inspection.

Moving onwards we meet the observatory hives, the bees from which pass through channels to the outside of the boundary fence. Here the Judges (Rev. G. Baynor and Messrs. Carr & Cowan) award first honours to Mr. W. Freeman for a hive of dainty construction, priced at ten guineas. It contains six frames of comb, which when the hive is closed stand together in two sets of three each. The sets are placed end to end against an opening communicating with the exit and entrance channel, and from this opening the bees have access to all the frames. Each frame hangs in a narrow box with glass sides, while the two outer of each set rotate on a pivot placed in the central chamber. When an examination is to be made these outer frames are thrown from the fixed central one until they stand as six equidistant rays from the chamber aforesaid, which has a piece of comb crossing it so that the queen can pass without interruption through the middle of the hive from end to end. Second place has fallen to Mr. Brice Wilson, whose arrangement in some respects resembles the one described. The frames are six in number in glass-sided boxes, each of which has a tunnel running from it to the centre of a flat hexagonal stage, upon whose edges the frames can be arranged. The hexagon itself revolves, as does also each frame, thus bringing both sides of all combs under examination without the observer changing his position. The boxes are placed side by side for conservation of heat when the hive is not in actual use. Mr. Abbott stands No. 3 with a much smaller, simpler, and less mostly hive. It hangs bodily, as does a door, so that it can be

shut back at pleasure. It does not admit of closing the combs together; but this is a doubtful advantage, since, although heat is saved, the obstructive glass remains, and would prevent the colony from long maintaining itself without assistance.

Remarks upon the frame hive must remain till next issue. Two tents for displays of manipulation have been erected, and here the competitions in driving and transferring will be held.—F. CRESSHIRE.

### OUR LETTER BOX.

**FOWL UNHEALTHY (L.H.).**—Your bird is sickening, but the malady is at present in its curable stage: if neglected, it will doubtless end in rump. We advise you to separate him from the others, to purge him, and afterwards give some pills of camphor, two the size of a pea, in the evening. Feed him on soft food, ground oats or barley meal alaked with milk. You may continue the camphor till there is a decided improvement. You may also give him for a midday meal some stale bread steeped in strong ale.

**HEN NOT HATCHING EGGS (J.R.W.).**—A hen cannot sit too closely. We believe the eggs were allowed to get too dry before the moulting took place. The inner membrane was hardened—in fact it was cooked, and nothing would afterwards soften it. It is impossible to over-rate the importance of this process. If a hen steals a nest in a hedge she leaves her eggs at daylight to feed. The grass at that hour—3 A.M.—is as wet as a pond. She returns to her duties, reeking with water running from her breast feathers, and in that state settles down. This happens once in twenty-four hours during the whole period of incubation. In a wild bird's nest (Pheasant or Partridge) you may find addled or clear eggs, but you will not find that eleven have run and the remaining number have dead poult or chicks in them. To find a nest containing only eggs that had chicks in it would only prove that near hatching time the old bird had been scared from her nest and did not return till the poult had died from chill to the egg.

**EGGS LEFT FOR TWO HOURS (J.B.S.).**—They probably will hatch; at all events, you would be wrong not to wait for the result.

**STEWARTON HIVE MANAGEMENT (A Constant Reader).**—We sympathise deeply with your misfortune, but suspect there must have been something in the process of manipulating the junction of the two swarms which aroused the anger of the bees and caused the fighting which ended so disastrously; but we will refer your letter to a first-rate authority on the Stewarton management, and communicate his opinion on the causes of failure. That we might not mislead we quoted from his published experience of the Scotch mode of working the Stewarton hive.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.						Rain.
	Barom. at 35° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		In. In.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass.			
1879. June and July.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.			
We. 25	29.590	51.6	50.8	W.S.W.	58.3	65.3	68.7	115.6	44.4	0.099		
Th. 26	29.777	57.5	53.9	S.W.	56.8	63.9	66.9	91.3	42.5	0.113		
Fri. 27	29.758	64.4	59.5	S.	55.2	69.7	51.3	116.6	47.9	—		
Sat. 28	29.697	59.6	56.3	S.	56.4	71.6	57.3	127.3	53.8	—		
Sun. 29	29.993	61.7	55.6	S.W.	57.3	67.7	51.3	123.9	47.6	0.037		
Mo. 30	30.089	61.7	54.6	S.W.	57.3	70.8	50.4	125.4	46.6	0.385		
Tu. 1	29.458	57.4	55.6	S.	57.3	63.7	53.7	91.1	51.9	0.398		
Means	29.793	59.1	55.0		56.3	67.4	51.4	112.9	47.7	0.282		

### REMARKS.

- 25th.—Wet early, gradually cleared, sunshine by 10.45 A.M., afterwards sunshine and showers.  
 26th.—Morning very damp and unpleasant; rest of day dull, with short intervals of sunshine.  
 27th.—A pleasant day, but not very bright.  
 28th.—Dull early, with a little rain about 9 A.M.; afterwards beautifully fine and bright.  
 29th.—A heavy shower a little before noon; rest of day fine and bright.  
 30th.—Fine, but occasionally cloudy; began to rain about 11.30 P.M.; wild night.  
 July 1st.—Very heavy rain in the morning, ceasing about noon; afternoon overcast with showers; evening fine.  
 Although the wind has been south-westerly, owing to the frequent rain the temperature is below the average. The rainfall of the first half of this year has been greater than in the whole year 1864.—G. J. STIMONS.

### COVENT GARDEN MARKET.—JULY 2.

THE first natural Strawberries have reached us this week from the South Coast with evident signs of the backward season, the West of England fruit being exceptionally indifferent. Business far from brisk, though best goods are in demand.

### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	0 0 to 0 0	Melons.....	each	3 0 to 5 0
Apricots.....	dozen	2 0 3 0	Nectarines ..	dozen	0 0 0 0
Chestnuts.....	bushel	12 0 16 0	Oranges .....	dozen	0 0 12 0
Cherries.....	dozen	12 0 16 0	Peaches .....	dozen	0 0 24 0
Currants.....	½ sieve	0 0 0 0	Pears, kitchen.	dozen	0 0 0 0
Black .....	½ sieve	0 0 0 0	dessert.....	dozen	0 0 0 0
Figs .....	dozen	6 0 12 0	Pine Apples ..	½ lb	3 0 5 0
Filberts .....	½ lb.	0 9 1 0	Plums .....	½ sieve	0 0 0 0
Gobs .....	½ lb	0 9 1 0	Raspberries ..	½ lb.	0 0 0 0
Gooseberries...	½ sieve	4 0 4 0	Strawberries ..	½ lb.	1 0 8 0
Grapes, hothouse	½ lb.	0 0 0 0	Walnuts .....	bushel	0 0 24 0
Lemons .....	½ 100	4 0 8 0	ditto .....	½ 100	0 0 0 0



## WEEKLY CALENDAR.

Day of Month	Day of Week	JULY 10-16, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.					
10	TH	Horticultural Exhibitions at Spalding, Winchester, Quakett Microscopical Club at 8 P.M. [and Kilsby. Reigate and Horsham Rose Shows. 6 SUNDAY AFTER TRINITY.	74.7	50.3	62.5	3 56	8 14	10 38	11 46	21	5 2	191				
11	F		75.4	50.7	63.0	3 57	8 13	10 54	0a 56	(	5 10	192				
12	S		75.9	50.5	63.2	3 59	8 12	11 13	2 6	23	5 18	193				
13	SUN		76.1	51.4	63.7	4 0	8 11	11 37	3 16	24	5 25	194				
14	M	Oxford and Shrewsbury Rose Shows. Hereford Rose Show. Enfield Hort. Exhibition.	74.5	50.5	62.5	4 1	8 10	morn.	4 23	25	5 33	195				
15	TU		76.6	50.7	63.7	4 2	8 9	0 8	5 26	26	5 39	196				
16	W		76.0	50.1	63.0	4 3	8 8	0 49	6 22	27	5 45	197				
From observations taken near London during forty-three years, the average day temperature of the week is 75.8°; and its night temperature 50.6°.																

From observations taken near London during forty-three years, the average day temperature of the week is 75.6°; and its night temperature 50.8°.

## SELECT CAPE AND NEW HOLLAND PLANTS.

No. 1.

**W**E were told some few months back that one of the chief benefits of a war in a strange country was its leading to a great increase in our geographical knowledge; this, however, is a very expensive way of learning geography, and a wretched apology for the horrors of war. Apart from the political and social benefits which are to be the outcome of the present unfortunate war in South Africa (and which in the interests of humanity all will wish soon ended) we look forward to the introduction of many new and beautiful plants, for amongst our forces there engaged are numerous highly scientific officers and men, close observers of Nature, who will not fail, in spite of their arduous duties, to bring back with them many interesting objects both in the vegetable and animal kingdom. From the Colony of Natal, which will now be more traversed than ever it has been by Europeans, many new plants are yet to come; whilst a large and comparatively unknown territory like Zululand cannot fail to abound in plant treasures, even though they belong to tribes and families which were more cultivated in the old times than the present.

The old times, "the good old times!" How often do we hear this remark from the aged, especially those who delight in a quiet, dreamy, romantic life! Few, however, would attempt to prove that the world in the so-called good old times was half so pleasant a world to live in as these times in which our lot has fallen, or should the attempt be made it would equally fail to convince. Notwithstanding this assertion, however, it is our intention to attempt to convince some of the young gardeners and amateurs that we had in our gardens and greenhouses in "the good old times" many truly beautiful flowering plants that we do not possess now, and which have neither been replaced nor surpassed.

Several reasons have induced us to commence a few brief remarks upon these plants and their culture, not the least being that the public taste seems fast inclining that way. This we attribute to the fact, that whilst during the last twenty or thirty years we have received innumerable species of new plants from all known quarters of the globe, but few handsome greenhouse flowering plants have been introduced in comparison with the numbers of those remarkable for handsome leaves. Our readers, however, must not infer by this reasoning that we depreciate in the slightest degree the charms of those plants the beauties of which are confined to their leaves; instead of such being the case we would yield to none in our admiration of ornamental foliage. Another reason why the Cape and New Holland plants have so slipped as it were out of cultivation during the past twenty years was the increased space required to accommodate the quantities of softwooded plants which the furore for the summer bedding system rendered indispensable. Thus as the treatment of these softwooded plants did not agree with the hardwooded plants of the greenhouse, the latter soon became shabby and unsightly, which ended in their being declared not showy enough to be worth grow-

ing, and consequently numbers of them found their way to the rubbish heap.

We do not denounce bedding-out, be it borne in mind, by any means; yet we must admit that the adherence to the purely geometrical style of bedding produced a gay but very monotonous display, and our changeable and fickle seasons rendered this oftentimes but of short duration. There now seems to be a change coming over the fashion in this respect, and we cannot but think it a very happy one—a more restricted geometrical garden, and a greater variety of plants used therein; the abolishing of straight lines of but few kinds of plants from the borders, and substituting of an endless variety of hardy herbaceous and alpine plants, thus coming back to the mixed border, where if a proper selection is made a good display may be produced all the year round. This system has relieved the greenhouses from the superabundance of bedding plants, and so the old favourites are again being sought after: in this search we shall endeavour to assist those who may require some guidance by introducing to their notice from time to time in the pages of the Journal some of the most desirable.

## CHOROZEMA.

This genus belongs to the Pea-flowered section of Leguminosae, and contains many beautiful plants suitable either for home decoration or exhibition purposes. They are mostly quick-growing slender plants, and may be kept to almost any size required either by the judicious application of the pruning knife after flowering, or by keeping a succession of young plants which may be easily obtained from cuttings or from seed. Pot in loam and peat with a good proportion of sand, drain well, and never allow them to suffer from want of water. They enjoy the free air at all times.

*C. Henchmanii* (fig. 2, page 23), is perhaps one of the most beautiful of the whole genus, requiring also more care in cultivation. Leaves narrow, needle-like, entire, and dark green, the whole plant having a hoary appearance. Flowers produced on a long terminal leafy raceme, bright red, with a spot of green at the base of the standard. It blooms from about the end of April to the end of June. New Holland. 1824.

*C. cordatum splendens*.—A tall bold-growing variety of *C. cordatum*. The leaves are ovate, with a heart-shaped base, spiny at the margins, and light green. Flowers in long loose racemes; colour a very showy red, the standard spotted with yellow. It blooms during April and May. New South Wales.

*C. superbum*.—A slender plant with oblong obtuse leaves, sessile, coarsely toothed at the margins, bright green. Racemes loose, but many-flowered; standard orange yellow, with a spot of pale yellow at the base; wings crimson. It blooms during April and May. New Holland.

*C. spectabile*.—This is a climbing plant, and consequently should not be grown as a bush. Leaves oblong-lanceolate, and bright green. Flowers orange red, produced on long drooping racemes during the winter and early spring months. Swan River. 1840.

*C. Larrencianum* is perhaps one of the strongest growing of the whole genus. Leaves oblong-ovate and bright green.

Racemes many-flowered; colour bright orange and scarlet, produced during May and June. New Holland.

*C. varium Chandlerii*.—An improved variety, dwarf and compact-growing. Leaves spiny at the margin and dark green; the long raceme being profusely clothed with its orange and scarlet pea-shaped flowers. It blooms during April and May. The species was introduced from Swan River. 1837.

*C. Dicksonii*.—This is a very handsome species, one with very large flowers. Leaves lanceolate, entire, bright green, slightly hairy on both surfaces. Racemes profusely laden with its scarlet and yellow flowers during the months of June and July. Swan River. 1836.

#### CALLISTACHYS.

A genus nearly allied to *Chorozema*; conspicuous, as its name implies, for fine spikes of large showy flowers, which are pea-shaped. They are quick-growing plants, and may easily be formed into handsome specimens. Treatment the same as for *Chorozema*.

*C. linearis*.—A robust-growing plant and freely branched. Leaves linear elongated, mucronate, edges slightly revolute, some 3 inches long, bright green. Racemes terminal. Flowers large; standard dull reddish purple with a spot of dark purple at the base. Wings dark purple. It blooms during the autumn months. Swan River. 1838.

*C. longifolia* (fig. 4, page 31).—This very handsome species blooms during the months of June and July. Leaves lanceolate mucronate, some 6 inches long, smooth, and dark green above. Racemes terminal, many-flowered; standard bright yellow; wings purple. Swan River. 1840.

*C. lanceolata*.—An extremely showy species. Leaves lanceolate, acute, dark green, and, like the stem, clothed with long beautiful silky hairs, rendering it even when out of flower very attractive. Racemes dense, terminal. Flowers large, golden yellow. It blooms during June and July. Swan River. 1815.

#### EUTAXIA.

Another member of the Pea-flowered Leguminosæ. The name signifies modesty, and has been given to these plants in allusion to their humble unattractive appearance when not in flower, but when covered with their gay blooms they form splendid ornaments to the greenhouse. Cultivation the same as already given for former genera. They require attention in the matter of stopping the shoots in order to produce lateral branches, or they are apt to become lanky unbranched plants. We prefer seedlings of all the Pea-flowered Leguminosæ to plants obtained from cuttings, as we have invariably found the former made the best-shaped plants.

*E. myrtifolia*.—An erect-growing shrub with slender stems. Leaves opposite, dense, narrowly lanceolate, with a sharp point, about half an inch long and deep green. Flowers brilliant yellow, in pairs in the axils of the leaves, often clothing the slender stems for more than a foot in length. It blooms during May, June, and July. Western Australia. 1803.

*E. Baxterii*.—A more compact-growing species than the last-named, but certainly not more graceful. Leaves opposite, obovate, ending in a sharp point, about half an inch long, dark green above, paler below. Flowers axillary, mostly in threes, crowded, forming a dense spike of some 6 inches in length; colour golden yellow, produced during the spring and summer months. Western Australia. 1830.

*E. pungens*.—This is a very distinct much-branched species, with acicular Heath-like leaves. Flowers axillary, much crowded; colour of standard yellow, the wings rich orange. It blooms during May and June. New Holland. 1825.

#### AOTUS.

As a genus this is nearly allied to *Pultenæa*, from which, as its name implies, it is distinguished by the want of the ear-like appendages to the calyx. The members of this genus are for the most part very handsome and well deserve cultivation, many showy species having never yet reached us in a living state. Pot in loam and peat in about equal parts, adding a good portion of sand.

*A. villosa* (fig. 3, page 27).—A pretty, compact, much-branched shrub. Leaves verticillate, in threes, narrowly oblong, ending in a hair-like point, light green and villous on the upper side. Flowers axillary, bright canary yellow; the standard streaked with crimson lines. May and June. New Holland. 1790.

*A. gracillima*.—This is a very slender graceful species. The leaves are small and linear, obtuse and dark green. Flowers

axillary, bright yellow, and produced in such profusion as to entirely hide the leaves, leaving the slender stems like long dense racemes of flowers. It cannot fail to charm everyone with its beauty. It blooms during May and June. West Australia. 1844.

#### RUST ON GRAPES.

THE theory advanced by "A KITCHEN GARDENER" that this is caused by thinning with damp and dirty scissors will not bear much examination; for in the first place, to a close observer, the rust can often be seen before the scissors are brought into use, in fact before the whole of the flowers on a bunch have set. Secondly, the rust is not confined to the parts where the scissors would be most likely to touch, but in bad cases is all over some of the berries. I could give many more reasons, but a third, and that a rather pointed one, must suffice. Four or five bunches of Muscats which flowered and set earlier than the rest are rusted; the others, probably three hundred bunches, in the same house, of the same variety, and indeed on the same plants, for there are only four vines in all, have no rust. The rusted bunches, as well as a good portion of the others, were thinned by my own hands. Well, then, here am I in company with, I am afraid not a few, according to "A KITCHEN GARDENER'S" judgment, guilty of thinning with damp and dirty scissors. I plead guilty to that charge, and further, I will own that I am past reformation in this particular, and for this reason—my scissors get dirty and damp by the time I have cut through half a dozen stems, and I could not afford the time to polish them up as often as that. I clean them when the dirt accumulates so that they do not work freely, say once in an hour, and I prevent them injuring the berries by the simple expedient of not allowing berries and scissors to come in contact. If in thinning the scissors touch the berries it proves that either the operator is not efficient or the work has been too long deferred.

Well, then, having proved to my satisfaction, and I hope to "A KITCHEN GARDENER'S," that his theory is wrong, I shall be expected to put something in its place. It was not sulphur which caused the rust, for none was used. It was not syringing, for my vines have not been syringed for several years. Neither was it steam from the pipes, for the pipes are amply sufficient without making them very hot, and the evaporating pans have never been used. It was not a cold draught, for the house is so constructed that sufficient air can be given without the cold draught reaching the vines; but nevertheless I have no doubt it was caused by faulty ventilation. Rust, scalded berries, and scorched ends of shoots are all caused by the same thing—viz., giving air (perhaps two minutes) too late. One mistake this way is quite sufficient to disfigure, if not to spoil, a whole house at such a critical time as when the flowers are just setting, and had mine all been so forward as the few bunches in question at the moment the mishap occurred I should now have to deplore the disfigurement of the entire crop instead of looking forward hopefully as I do to the best house of Muscats I have ever grown. In our modern light-built houses the temperature rises so very rapidly when the sun touches them that giving air properly is the one great thing to learn.

I have written so much on this subject at different times that I must not enlarge on it now, for a friend once told me I never wrote about anything else besides giving air. However, I will say a standing rule with me is never to wait for a rise of temperature, but give air in advance, and allow the temperature to rise afterwards. Practice only in a given place and a study of the wind and clouds will teach each one how to act for himself.

I would urge on all who grow Grapes which they wish to keep through winter to apply plenty of fire heat so long as the cold weather continues. If Grapes do not begin to colour by the end of July or the first week in August they will not keep well. It is all very well to talk about doing without fire heat in summer, but I do not call it summer when the thermometer goes nearly down to 40° night after night, though it be the month of July. We had no summer in 1860, and such a thing might occur again in spite of the hot-weather prophets.—WILLIAM TAYLOR.

STRAWBERRIES FOR FORCING—LIQUID MANURE.—In a recent issue of your valuable paper Mr. Ogle recommends liquid manure to be given to Strawberries for forcing as they throw up their flowers. As the practice is in almost direct

opposition to what we practise here I should like to have the opinion of some of your readers upon the subject of liquid manure for Strawberries to be forced. My present master never allows his Strawberries to receive liquid manure until after the fruit is set; then any quantity is given. He contends that Strawberries will not set their fruit if they receive any stimulant, such as liquid manure, before the stage mentioned. He grows very good fruit; President over 2 ozs. each. Mr. Ogle's practice is entirely new to me, which makes me desirous of having the practice of some other of your correspondents. —A FOREMAN.

#### NOTES ON PANSIES.

I NOTICED lately in one of your contemporaries that Pansies raised in the north do not succeed when grown in the south. I find it impossible to grow some of the varieties introduced from the south, and I am this season trying in a frame the varieties lately received from the south. Mr. Hooper of Bath is the grower one turns to as representative of the southern growers; and though I do not find his introductions in some instances up to the standard of the Scotch raisers, at the same time the varieties of which Robert Parker may be taken as a type are quite distinct from anything we have here, and exceedingly attractive in colouring; but it is these varieties that are difficult to grow and to produce good flowers. At the same time some of the introductions of Mr. Hooper are the freest-growing and most floriferous of any we have. Instances in point are King Koffee, Jupiter, Brilliant, and Mrs. Felton, besides many more which would be much regretted if lost.

But doubtlessly the Pansies of the future will be produced from the section known as Fancy. There is a marked improvement in these year by year, the rich and varied colouring of the flowers having in addition that distinctness in the markings, besides the form of the blooms being brought to that standard so dear to the florist in all his dealings with Nature. And then there is no difficulty whatever in growing the varieties of the Fancy section. All they require is a rich well-worked soil in the first place to be planted in, and throughout the summer an occasional clearing-off of the seed pods and withered blooms, when flowers will be continuously produced right on during summer and until the damp and cold of autumn put a stop to the flowering of most plants.

Pansies are strictly perennials, and although it is necessary to keep up a stock of young plants from cuttings in order to obtain large and fine blooms, it is not at all necessary to do so in ordinary cases. We have plants dotted in front of borders which have occupied the same position these last three years, and in early summer these old plants make a particularly fine display. I may have something more to say about Pansies before long.—R. P. B.

#### ARTIFICIALLY NETTED VICTORY MELON.

WE were somewhat surprised to see the article on this subject (page 6) in last week's Journal. We have certainly been much deceived in the "Netted" Victory Melon, having purchased seed under the impression that the Melon from its appropriate name would be handsomely netted. It is a very good Melon, but with us has scarcely shown any signs of netting, some fruits not having the slightest trace on them. We had concluded the absence of netting on our fruits had been due to some fault in their cultivation. Since the notes in the Journal we may safely decide that the non-netted fruits are characteristic of the variety, and the fault not ours. We think that this artificial system of Mr. R. Gilbert's may be rightly adopted as far as fruits for home consumption are concerned, but it is another thing to exhibit them and gain honours for them when the judges are left in ignorance of the mode that has been adopted to represent an important property that the Melons do not naturally possess. Had Mr. Gilbert exhibited his Melon under its right name of "Artificially Netted Victory," and had it been sold under that name, no one would have been deceived. Enough has been written lately about questionable practices in exhibiting, and the sooner they are put a stop to the better.

Further, many of the new Melons that are now purchased do not when grown answer to the description given of them. For instance, we have now hanging fruits of "Mann's New Hybrid" Melon fully a foot long in our Melon house more like Pumpkins or Vegetable Marrows than like the Melon ex-

hibited by Mr. Mann at the last Manchester Show. All the plants raised from a packet of seed are alike. This is a great annoyance, and the two facts named must naturally make



Fig. 2.—*Chorozema Henchmannii* (see page 21).

gardeners hesitate before ordering new varieties of Melons in future.—W. BARDNEY.

JAPANESE AND CHINESE PLANTS.—I do not think that the unusual growth of the plants referred to on page 472 can be attributed to the absence of frosts during the spring. The spring frosts killed all my Antirrhinums, many Wallflowers, Pinks, &c., as soon as they had put forth their young shoots. In fact my attention to this subject was first attracted by the strong and healthy growth of *Dianthus Heddewigii*, when so

many of its garden contemporaries were killed or much injured this spring by the very trying changes from warm to frosty nights and *vice versa* well into May. In March it was singularly trying, the minimum temperature during night being 23°; at 10 A.M. 35° in shade, 53° in sunshine; on another occasion 26° at night; 88° in shade at 10 A.M., 61° in sunshine; and on one occasion in March or April my thermometer facing the sun at 10 A.M. was 55°, another in the shade stood at 29°—a difference of 26°. The extraordinary changes of temperature this spring have been as trying to many frail individuals as to plants.—G. O. S.

[In consequence of the protracted winter the growth of many plants and trees was much retarded, and thus escaped injury by spring frosts. This was the case with all kinds of fruit blossom, Chestnut flowers, &c., which were unusually fine this year. The young growths of Roses have rarely been injured by frost this spring, and Dielytras and other plants of that nature have enjoyed the same immunity in the south, and have therefore grown and flowered with great freedom.—EDS.]

#### ALEXANDRA PALACE ROSE SHOW.—JULY 5TH.

THE date fixed for this Exhibition gave hopes that it would prove rather more successful than that held at the Crystal Palace last week, and to some extent these hopes were realised; but the weather continues unpropitious to Rose-growers, and although the entries were sufficient to fill all available space, yet many noted rosarians were unable to compete, and consequently some unpleasant gaps were here and there evident.

"How," writes Rev. Alan Cheales, "Mr. Baker was able to show such Roses in such a season is a perfect marvel! Most of the boxes showed evident traces of the pelting and buffeting which we have been daily undergoing; but his might have come out of a glass house, and lovely indeed they were! Mrs. Baker almost the most charming of all. I noticed in his selection besides, especially Marie Baumann, Camille Bernardin, La France, and Marquise de Castellane. La France and Duke of Edinburgh are decidedly good this year. Mr. Prince had a wonderful Alba Rosea. Mr. Cant's Marie Baumann and John Hopper were grand; as also Michelon and Marie Finger in a box of Mr. Curtis. Mr. G. Paul's box of forty-eight triplets contained also some very fine Roses, though there were enough damaged Roses to reduce him to a second prize. His Henri Ledechaux far surpassed anything I had supposed that Rose capable of. Sultan of Zanzibar was grand, as also were La Rosière and Ferdinand de Lesseps. The Show was held in a large dining-room upstairs; and oh! such a cruel number of steps to mount up! The authorities should have pity upon heavily loaded Rose boxes. The Show must have been satisfactory, but there were very many gaps, and still the Rose opening season can hardly be said to have arrived."

In the nurserymen's classes the competition was good, and among the numerous collections staged were several of special merit. Of the five exhibitors in the class for seventy-two distinct varieties Messrs. Keynes & Co, Salisbury, justly obtained the premier award for an even collection which included some really fine blooms. The varieties were Madame Sertot, Maréchal Vaillant, Princess Mary of Cambridge, Prince Camille de Rohan, Boule de Neige, Auguste Rigotard, La France, excellent; Charles Lefebvre, good; Duchesse de Vallombrosa, Maurice Bernardin, Etienne Levat, Cheshunt Hybrid, Elie Morel, Monsieur Gabriel Tournier, Madame Nachury, Exposition de Brie, fine; Fisher Holmes, Marie Van Houtte, Souvenir d'Auguste Rivière, Climbing Devoniensis, Horace Vernet, Marie Baumann, good; Abel Grand, Mdle. Eugénie Verdier, Beauty of Waltham, Reine du Midi, Duc de Rohan, Capitaine Christy, Dr. Andry, Princess Beatrice, fine; Mons. E. Y. Teas, Madame Victor Verdier, Pierre Notting, Madame Laurent, Sir Garnet Wolseley, Maréchal Niel, Camille Bernardin, Richard Wallace, General Douai, Victor Verdier, Clotilde Rollande, Star of Waltham, fair; Mdle. Marie Rady; Devoniensis, well formed; Louis Van Houtte, good colour; Ferdinand de Lesseps, Madame Willermoz, Duke of Edinburgh, La Rosière, Royal Standard, Général Jacqueminot, Lord Macaulay, Sénateur Vaisse, Dupuy-Jamin, and Centifolia Rosea. Messrs. Curtis, Sandford, & Co., Torquay, obtained the next position with blooms of medium quality generally, but some were highly meritorious, particularly Comtesse de Serenyi, Marguerite Brasseur, Princess Mary of Cambridge, Sénateur Vaisse, and Baronne de Rothschild. The third prize fell to Messrs. Paul & Son, Cheshunt, who staged small but good flowers. Messrs. J. Mitchell and Sons, Uckfield, Sussex, secured the fourth prize, and an extra one was awarded to Mr. W. Farren, Cambridge.

There were only two collections of forty-eight triplets. Messrs. Keynes & Co. were again first, and Messrs. Paul & Son second. There were five competitors in the class for twenty-four triplets. Mr. B. R. Cant, Colchester, secured the premier position with a collection that comprised many fine flowers; Messrs. Curtis & Co.

followed with fresh blooms; Messrs. Keynes & Co. were third with rather rough flowers; and Messrs. Paul & Son fourth.

The exhibits in the class for single trusses of twenty-four distinct varieties were very numerous, for no less than ten were staged. Mr. B. R. Cant's premier collection contained excellent examples of Duke of Edinburgh, Madame Thérèse Levat, Baronne de Rothschild, Charles Lefebvre, Souvenir d'un Ami, Maréchal Niel, La France, Hippolyte Jamin, Prince Arthur, Sénateur Vaisse, Marie Baumann, Mrs. Baker, John Hopper, Maurice Bernardin, and Rubens. Mr. W. Corp, Oxford, was a good second; Messrs. Keynes & Co. third; Messrs. J. Laing and Co., Forest Hill, fourth; and Mr. W. Farren was awarded an extra prize. In the class for twelve Tea or Noisette Roses six exhibitors appeared. Mr. George Prince, Oxford, was placed first, and in his collection the following varieties were well represented—Marie Van Houtte, Maréchal Niel, Alba Rosea, Catherine Mermet, Rubens, Souvenir d'Elise, Amazon, Comtesse Nadaillac, Madame C. Kuster, Souvenir d'un Ami, and Elise Sauvage. Messrs. J. Mitchell & Sons were second (flowers rather small); Mr. B. R. Cant third, and Mr. B. Cooling, Bath, fourth.

The amateurs appeared in strong force. Mr. R. N. G. Baker's exhibits cannot be too highly praised, for, considering the unfavourable season, his Roses were all that could be expected or desired in form, substance, and colour. That the high merit of his flowers was appreciated by the Judges is evident from the fact that he was placed first in the three principal classes—viz., for forty-eight and thirty-six single trusses and twenty-four triplets. The collection of forty-eight possessed particular excellence, and attracted admiration not only from the critics but the majority of visitors also. As the varieties in this class were mostly the same as those exhibited by Mr. Baker in the two following classes it will be unnecessary to repeat them after noting the forty-eight varieties. One of the grandest blooms in this excellent collection was La France, in exquisite condition but somewhat pale. Mdle. Eugénie Verdier, Lord Macaulay (fine), Marquise de Castellane (good), Victor Verdier, Docteur Andry, Hippolyte Jamin, Marguerite Brasseur, Duke of Wellington, Monsieur Etienne Levat (large), Abel Grand, Maréchal Vaillant, Capitaine Christy, Marquise de Gibot, Duke of Edinburgh, Dupuy-Jamin, Duke of Connaught, Countess of Oxford, Charles Lefebvre, Clotilde Rollande, Prince Camille de Rohan, Ferdinand de Lesseps, Annie Laxton, Marie Baumann, John Hopper, Mrs. Baker, Maurice Bernardin, Anguste Rigotard, Madame Nachury, Xavier Olibo, Sultan of Zanzibar, Princess Mary of Cambridge, Thomas Mills, Mons. Gabriel Tournier, Centifolia Rosea, Reynolds Hole, Madame Victor Verdier, Souvenir de Charles Montant, Mons. E. Y. Teas, La Rosière, Royal Standard, and Marguerite de St. Amand. The second prize was accorded to Mr. T. Jowitt, Old Weir, Hereford, whose flowers were very good but yet inferior to the foregoing in several points. Mr. G. Rushmore, gardener to Sir C. Rawley, Bart., Colchester, and Mr. J. Davis, Wilton, followed in the order mentioned. There were six exhibitors in this class.

In the class for thirty-six single trusses Mr. Baker's collection was the principal feature, but several of the seven other competitors staged very good blooms, especially in the second-prize collection from Mr. W. Smith, gardener, Bird Hall, Colchester. Mr. J. L. Rushmore was a close third, and Mr. W. Harrington, Romford, fourth, an extra award being secured by Mr. J. Brown, gardener to A. J. Waterlow, Esq., Reigate. Mr. R. N. G. Baker was followed in the class for twenty-four triplets by Mr. Joseph Davis and Mr. T. Jowitt, both of whom sent flowers of only medium quality. Mr. J. Hollingworth would have had the second prize in this class but for a mistake made by the exhibitor in naming a bloom of Duke of Edinburgh Louis Noisette, his stand thus including two blooms of the Duke. A stand exhibited by Mr. Brewster, gardener to J. Reid, Esq., in the class for twenty-four blooms, also contained two examples of Duke of Edinburgh, one of them incorrectly named Duchess of Edinburgh, the Hybrid Perpetual Rose of that name being a silvery peach colour, and the Tea Rose of the same name rosy crimson. There were five entries of twenty-four varieties (single trusses), and the principal position was allotted to Mr. W. H. Wakeley, Rainham, Kent. The remaining prizes were secured by Mr. Edwards, gardener to the Rev. Canon Tarver, Mr. J. Gravelly, Sussex, and the Rev. E. L. Fellows, Royston, in the order mentioned. There was good competition in the class for twelve single trusses, for ten exhibitors contested for the prizes. Mr. Edward Mawley, Croydon, was an excellent first with Devoniensis, Madame C. Joigneux, Mermet, Mdle. E. Verdier, Marie Van Houtte, Coupe d'Hébé, Gloire de Dijon, Centifolia Rosea, Rubens, and Dr. Andry. Mr. J. Edwards, Mr. J. P. Hawtreay, and the Rev. Alan Cheales, Betchworth, followed, but the flowers were scarcely so fine as could be desired. Seven competitors entered the lists with collection of twelve Tea-scented or Noisette Roses, and Mr. T. Jowitt won the honours with good blooms of Belle Lyonnaise, Cheshunt Hybrid, Maréchal Niel, Nipheto, Marie Van Houtte, Cloth of Gold, Moiré, Homère, very rich; Devoniensis, Souvenir d'un Ami, Madame Bravy, and Rubens. Mr. W. Smith was second with an even collection, which included excellent examples of Solfaterre, Madame Bravy, and Maréchal Niel. Mr. J. P. Hawtreay was third, Mr. W. Harrington fourth, and Mr. W. H. Wakeley obtained an extra prize.



The open classes were poor, very few exhibits being staged, and those not first-rate in quality. For twelve distinct Roses sent out during 1877, 1878, and 1879 Messrs. Curtis, Sandford, & Co. were placed first with Princess Charlotte de Tremouille, Penelope Mayo (good), Mademoiselle Marie Verdier, Catherine Bell, Souvenir d'Auguste Rivière, Marquise Adèle de Murinais, Gabriel Luiset, Madame Albanie, Mons. G. Tournier, Egeria, and Madame Sophie Fripot (good). Messrs. Keynes & Co. were the only other exhibitors. For six trusses of any Rose sent out during 1877-8-9, Messrs. Paul & Son, Cheshunt, were first with poor blooms of Emily Laxton, and Messrs. Curtis, Sandford & Co. were second with indifferent specimens of Mabel Morrison.

Messrs. Paul & Son were the only exhibitors of eighteen trusses of English-raised Roses in commerce. The first prize was awarded for the collection, of which the best were Cheshunt Hybrid, Black Prince, Mrs. Baker, Duke of Edinburgh, John Hopper, Peach Blossom, Magna Charta, Sultan of Zanzibar, Annie Laxton, Charles Darwin, Emily Laxton, Prince Arthur, Miss Hassard, Marchioness of Exeter, Princess Beatrice, Reynolds Hole, and Oxonian. Messrs. Paul & Son were again the only exhibitors in the class for twelve trusses of English-raised Roses in commerce or not yet sent out. Messrs. Curtis were the only exhibitors of twelve trusses of Baronne de Rothschild, and they secured the first prize with excellent blooms. The same exhibitors were also first with twelve trusses of La France, and well they merited the position. Messrs. Keynes & Co. were placed second with blooms but little inferior to the others. There were three collections staged in the class for twelve trusses of Marie Baumann; and Mr. J. L. Curtis, Chatteris, Cambridgeshire, secured the first prize with very good and even blooms; Messrs. Curtis & Co. followed with smaller flowers. Mr. J. Davis, Wilton, exhibited the only collection of twelve trusses of Marechal Niel, and obtained the premier award with blooms of average merit.

Only one certificate was awarded, and that was to Messrs. Paul and Son, Cheshunt, for Duke of Teck, a seedling Rose of the Duke of Edinburgh type, but much brighter in colour; it is brighter even than John Bright, the smooth crimson petals being distinctly suffused with scarlet. Being a free grower and bloomer the Duke of Teck must be pronounced a Rose of great promise.

The following miscellaneous collections were highly commended:—Cut Roses from Messrs. W. Paul & Son, Waltham Cross; Pansies, exhibited by the West of England Pansy Society and Mr. T. S. Ware, Tottenham; succulent plants from Mr. Boller, Kensal New Town. Mr. T. S. Ware also exhibited a collection of extremely good Pyrethrum flowers and Pæonies. Mr. B. S. Williams contributed a large and elegant group of choice plants.

#### THE PEAR CROP OF 1879.

THE high hopes entertained when the trees were in bloom of a good Pear crop have, since the setting and shading process is over, been sadly disappointed, at least with many growers, and especially in the case of some varieties. We have here, however, on the wall, aspect west, the following varieties, all of which will be allowed to produce a fair crop of what at present promises to be very fine fruit. Brown Beurré, October. White Beurré, September. Dunnmore, September and October. Jargonelle, August. Joséphine de Malines, winter and spring. Gansel's Bergamot, two trees on same wall; the finest crop of this variety I have seen; an October and November Pear, well known not to be surpassed for flavour in the case of espalier and other dwarf-trained trees. Louise Bonne of Jersey, Seckle, and a few others are bearing well.

I will another time note the varieties that have failed to fruit this season after showing an abundance of bloom. With the assistance of the "RECTOR" let us hope to be able to proceed with a Pear election before planting time in autumn, the result of which will be useful to all interested in the culture of this proverbially favourite fruit.—R. H. C., *Oxon II* ath.

**EFFECTS OF THE WINTER.**—Now that we have got into July (I was going to write summer) I can speak with certainty of what has not been killed in the borders by the extreme cold of the late winter and spring. The Narcissuses have not only survived but they have bloomed splendidly (by-the-by, how far superior they are in the border to the Daffodils) quite equal to the imported bulbs bloomed under glass, which latter are now out in the borders and will remain there, the earth round the roots not having been disturbed. The Funkias also are all vigorous, their handsome foliage being very attractive. To the above must be added Pansies, Violets, Pinks, Carnations, Sweet Williams, Polyanthus, Irises, Symphytum officinale foliar., Geum coccineum plenum, Lilium album, Lychnis chalcedonica, Statice incana, Senecio pulcher, Oenothera Youngii, Spiræa japonica, Hydrangeas, and Dielytra spectabilis. The latter never were stronger or more full of bloom. None of the

above have been in any way protected, though within five miles of Liverpool in a garden facing east.—J. W.

#### THE LATE NATIONAL ROSE SHOW.

It requires a lover of Roses to exercise much self-control when commenting on a show that can only be called a total failure, but at the same time the truth should be spoken. Six weeks ago Mr. Cant, and Mr. Cranston, and other great rosarians warned Mr. Donfornain that the season was unusually late, that the fixture was far too early, and that the date should be altered; but he turned a deaf ear to all remonstrances, and not till Wednesday, after the entries were received and the truth of the warnings proved, did he attempt to alter the fixture. This then was an impossibility.

The largest trade cultivators of the Rose did not show a bloom. No amateur staged forty-eight. Mr. Baker, who has an exceptionally sheltered garden in Devon, could only bring an indifferent thirty-six, for which he was second, while for twenty-four he was placed fifth. Mr. Jowitt could only show a box of Teas and a twenty-four. The Rev. Canon Hole and Rev. E. N. Pochin, two of the greatest amateurs, could not show a bloom. There were only two stands of seventy-two. Mr. Curtis, who took the first prize, had some good blooms; and Mr. May of Bedale, who was second, cut entirely from under glass. Messrs. Keynes & Co. showed forty-eight trebles, but it was hard to find a really good one. He was easy first in this class it is true, but at an average exhibition he would have been nowhere. Perhaps the best box was thirty-six staged by Messrs. Kinmont & Kidd, nurserymen of Canterbury. Here were fine blooms of Emma All, Annie Laxton, Marie Cointet, and La France. There was indeed one magnificent bloom in the Show, and that was staged by Mr. Jowitt—Niphetos, perhaps the finest specimen ever seen of this tender variety. Messrs. Mitchell of Piltown had some fine Teas, but these were not to be compared with those he showed last year. Many boxes of Marechal Niel were exhibited, but all were unequal.

Everywhere you saw signs of the awful weather we have had—here and there great gaps in the staging, and whole classes without a single exhibitor. Even the members of the orchestra, who are not supposed to know much of Roses, made remarks upon the poverty of the Show: "Never have I seen such a poor lot of Roses here before." It is useless to give you more details of this so-called Exhibition; it would only be filling space by repeating the same thing—failure in every department. Their Royal Highnesses the Duke and Duchess of Connaught attended the Show, and what they thought of it I know not; but it is heartrending to think that the Royal bride should form her first and perhaps last notions of what a National Rose show is in the land of her adoption from the miserable Exhibition of the 28th ult.—WYLD SAVAGE.

READERS of the Journal were prepared by the Hon. Secretary's notice of June 26th for the extreme difficulties under which the Show was held. Never was there such a season! Owners of four or five thousand Roses found it impossible to cut four or five blooms. It was a terrible elemental failure. It must have been for the Association a great financial success. Certainly the Treasurer never wished or expected to find so many prizes unclaimed. As many of us had expected, the leviathans did not have their fight for the cup. It is now relegated to next year by a vote of the Committee, when at last Mr. Cranston's splendid present to the Society is to find a permanent owner. Perhaps there never was a show in which one Rose more distinctly overshadowed all the others. Everyone who was there will at once think of Mr. Jowitt's marvellous Niphetos, which for size, shape, and yet delicacy, was certainly the very finest Tea Rose I have ever seen.

I have said the National Rose Show was a financial success: what is more it was great, a solid one, and though far the smallest the Society has ever held (or, I hope, ever will hold), it is also to be remembered as having been the first graced with a special visit of Royalty. The sight was a very striking one as the Duke and Duchess of Connaught advanced with a flourish of trumpets along a carefully roped-in space up the vast nave of the Crystal Palace, attended by the Palace officials, and received on the borders of Roseland by the President, Treasurer, Secretaries, and Committee of the National Rose Society, and received the presents recorded in your report of the Show. The Royal procession then swept on, and the crowds returned to the study of the Roses. Six o'clock is the time for removing the boxes, but they were still being eagerly

inspected at that hour. The Crystal Palace Company may be congratulated that, if the National Rose Society's Roses come short, certainly the British public was sufficiently largely represented.—A. C.

## ROYAL HORTICULTURAL SOCIETY.

### ROSE AND PELARGONIUM SHOWS.—JULY 8TH.

ALTHOUGH the Royal Horticultural Society was the first to perceive the necessity for postponing the date of their Rose Show, yet the time gained from June 24th to July 8th has not proved sufficient for Roses to be in the zenith of their beauty, and southern growers still maintain their advantage; yet, notwithstanding the protracted cold weather, the display, though not large, was much the finest of its kind that has been seen this year, and was greatly enjoyed by the numerous visitors. The season, too, has been almost equally unfavourable for Pelargoniums, bright sunlight being essential for the production of sturdy plants and numerous and bright trusses of flowers. Still the Society's Show was an excellent one, a marked improvement being apparent in many of the classes. The first half of the long tent leading from the Council-room to the large marquee was laid out as a Rose garden by Messrs. William Paul & Son, Waltham Cross, the remaining half being occupied with plants and cut blooms in competition for the prizes offered by the Pelargonium Society. The mounds in the principal marquee were clothed in an artistic manner by nurserymen, florists, and amateur exhibitors of miscellaneous plants, the boxes of Roses in competition forming a beautiful margin to the prominent groups. The blooms were perhaps fully too low to be examined with advantage, for many of them were worthy of close examination, the improvement in the condition of the Roses exhibited in comparison with those staged at the Alexandra Palace on Saturday being very striking. Mr. Turner, however, was unable to exhibit at all, and Mr. George Paul states that a week or more will elapse before his Roses are in their best condition.

The schedule only contained eleven classes—four for nurserymen, three for amateurs, and four open classes, and we will refer to them in the order of their arrangement.

**NURSERYMEN'S CLASSES.**—In the class of forty-eight single trusses five collections were staged, the awards going in the following order. First, Messrs. Curtis, Sandford & Co., Torquay; second, Messrs. Paul & Son, The Old Nurseries, Cheshunt; third, Messrs. Keynes & Co., Salisbury; and highly commended, Mr. B. Cant, Colchester. All these stands contained some really fine Roses, quite surpassing those at previous exhibitions this year. In the first-prize collection François Michelon was grand, and the following very good—Charles Lefebvre, John Hopper, Mons. G. Tournier, Duke of Edinburgh, Marquise de Castellane, Magna Charta, Mons. E. Y. Teas, Général Jacqueminot, Beauty of Waltham, La France, and Sir Garnet Wolseley. Messrs. Paul staged the finest bloom we have seen of Alfred K. Williams, a bright, full, symmetrical Rose, somewhat of the form of Marguerite Brascac but much more scarlet. Mons. Noman, Etienne Levet, Ferdinand de Lesseps, Marie Baumann, Mons. E. Y. Teas, and Victor Verdier were very fine in the same stand. Messrs. Keynes' blooms were generally smaller, the best being Marguerite Brascac, La France, Sénateur Vaisse, and Sir Garnet Wolseley. Mr. Cant exhibited a grand Duke of Edinburgh, a fine Etienne Levet, and very good examples of Sir R. Wallace, Prince Arthur, and Thomas Mills, very bright. W. Farren, Esq., How House, Cambridge, was the remaining exhibitor, but he evidently had to cut "hard" to make up his stands.

In the class for twenty-four triplets Messrs. Curtis & Co. were again in the foremost position. Remarkably fine were Mons. G. Tournier, Général Jacqueminot, John Hopper, Antoine Ducher (splendid), Princess Beatrice, La France, François Michelon (grand); and conspicuous was the very dark Abel Carrière. Messrs. Paul & Son were second, Sultan of Zanzibar and La Rosière being very rich, Ferdinand de Lesseps and Duke of Edinburgh extremely bright, and Abel Grand charming. Messrs. Keynes and Co. were third, the blooms being somewhat irregular, John Hopper being decidedly the best; but La France, Ferdinand de Lesseps, and Mons. E. Y. Teas were good. Mr. Cant also exhibited in the class.

In the class for twenty-four single trusses Messrs. John Laing and Co., Forest Hill, secured first honours with fresh and well-coloured blooms, but somewhat smaller than those in the preceding classes; their excellence, however, was sufficient to place them before Messrs. Curtis & Co. who were second, third honours going to Messrs. Keynes. Mr. Farren exhibited very well in this class. Five collections were staged, the best varieties being enumerated above. In the class for twelve blooms the prizes went to Messrs. Curtis, Keynes, and Laing in the order named, all staging remarkably well.

**AMATEURS' CLASSES.**—In the class for twenty-four single blooms the redoubtable Mr. Baker of Heavitree, Exeter, was in his old position—first, with fine and splendidly coloured blooms, admirably staged. The varieties were Ferdinand de Lesseps,

Etienne Levet, Lord Macaulay, Baronne de Rothschild, Sultan of Zanzibar, Beauty of Waltham, Mrs. Baker (grand), Mons. Noman, Marguerite Brascac, Duchesse de Vallombrosa, Duke of Edinburgh, La France, Dr. Andry, Marie Baumann, Fisher Holmes, Marquise de Castellane (very fine), Prince Camille de Rohan, Clotilde Rolland, Duc de Wellington, Marguerite de St. Amand, Maréchal Vaillant, Mons. E. Y. Teas, Avocat Duvivier, and Dupuy-Jamin—the finest stand in the Show. J. Hollingworth, Esq., Maidstone, was placed second; and Mr. Joseph Davis, The Square, Wilton, Wilts, third. Five collections were staged.

In the class for twelve triplets, Mr. Baker was again far ahead of other competitors. Mrs. Baker, Marie Baumann, Marquise de Castellane, Dr. Andry, Victor Verdier, Mdlle. Eugénie Verdier, and Ferdinand de Lesseps were superb; and very fine were Sultan of Zanzibar, Duke of Edinburgh, Fisher Holmes, and Prince Camille de Rohan. Mr. Hollingworth was second with large flat blooms, Mr. Davis being third with smaller but better coloured and fresher examples, including three Teas. In the class for twelve single blooms G. P. Hawtrey, Esq., Langley Place, Slough, secured the first honours with a stand in which the Teas Niphetos and Catherine Mermet with Maréchal Niel showed to great advantage amongst such fine dark Roses as Mons. E. Y. Teas, Horace Vernet (a fine bloom), and Duke of Edinburgh. Indeed the Teas, contrary to the principle of judging in the preceding class, must have won the prize, for Mr. Baker's second-prize stand contained generally superior blooms, but of nearly all dark Roses. Mr. Joseph Davis was third with small blooms.

**OPEN CLASSES.**—Mr. Hawtrey well won the first position in the class for twelve Teas with charming examples, but somewhat deficient in foliage, of Marie Van Houtte, Niphetos, Catherine Mermet, Madame Willermoz, Souvenir d'Elise Vardon, Maréchal Niel, Souvenir d'un Ami, Rubens, Marie Ducher, Devoniensis, Abbé Roustin, and Jean Ducher. J. H. Pemberton, Esq., Havering-atte-Bower, Romford, was an excellent second, the premier bloom being Madame Caroline Kuster; and Messrs. Keynes and Co. third. Some very excellent blooms were staged in the open class for six of any one sort of Hybrid Perpetual, Mr. Baker securing first honours with compact, charming, and highly coloured examples of Marie Baumann; Mr. Cant being placed second with very large and richly coloured blooms of Duke of Edinburgh, the finest we have ever seen; and Mr. Farren third with La France. Mr. Baker exhibited grand specimens of Marquise de Castellane in this class, and Messrs. G. Paul & Son Sultan of Zanzibar, Duke of Edinburgh, and Cheshunt Hybrid. For six Teas of any one sort Mr. Hawtrey was again first with a fine stand of Niphetos. The blooms indeed would have been grand but for the slightly injured outer petals. Mr. Davis was second with Maréchal Niel, and Mr. Farren third with Souvenir d'un Ami of moderate quality.

In the class for six distinct new Roses of 1877 and 1878 Messrs. Curtis & Co. secured the first position with Barthelemy Joubert, crimson; Catherine Bell, bright rose; Egeria, flesh; Princess Charlotte de Tremouille, salmon pink; and Madame Gabriel Luizet, of nearly the same colour, none of the blooms being of good quality. Messrs. G. Paul & Son were placed second with equally good blooms of Robert Marnock, Alfred B. Williams, Souvenir d'Adolphe Thiers, bright cerise; Princess Charlotte de Tremouille; Mrs. Laxton, very symmetrical but small; and Souvenir d'Auguste Rivière, rich velvety crimson. Messrs. Keynes & Co. were third, Madame Gabriel Luizet, rose, fine form, being very attractive; and Grand Duke Nicholas, very dark but flat.

The contribution of Messrs. Wm. Paul & Son above referred to was a very attractive one, and a total change from the Rose Show proper. The space of lawn occupied was 180 feet long and 16 feet wide, and was computed to contain upwards of ten thousand Roses and buds. The returns submitted by Mr. Paul showed that eight thousand Roses were cut on Monday at Waltham and Broxbourne, four thousand on Tuesday in the same nurseries, and one thousand on the same day at Framfield; but the whole of these were not employed in furnishing the garden. The plan of arrangement was as follows: A row of specimen Conifers, variegated shrubs, and Ivies were placed down the centre of the tent, the pots and baskets containing them being masked with small Golden Yews, *Raphiolepis ovata*, and shrubs of that nature. On both sides of this central row beds were formed in the lawn and filled with a few exceptions with Roses, round beds about 5 feet in diameter and oblongs alternating. From three to nine Roses and buds were placed in each inverted funnel-like cup provided for the occasion, and the whole placed sufficiently close together to form masses of Roses about 9 inches in height. A few examples of these beds may be submitted. The first bed was a round one filled with pink Roses and edged with *Lycopods*; then came an oblong, the centre being of crimson Roses, and the margin white and rose, edged with Golden Feather; next were two round beds, one filled with crimson the other with creamy yellow Roses, both edged with *Selaginella*. Then came beds of small Golden *Eunymuses* and Yews followed by more Roses, again varied by a bed of *Pæonies* on one side and of *Kalmias* on the other, and so on throughout the tent, the whole forming a display of great magnitude, and which

must have involved much labour in bringing to a successful issue.

#### THE PELARGONIUM SOCIETY'S SHOW.

THESE were not quite so numerous nor so fine as might have been desired, and several classes were unrepresented, particularly those for Ivy-leaved varieties; but some compensation could be derived from the fact that Zonals were staged in good condition and in superior varieties. Fancy and Show varieties were also notable in several collections, and cut blooms were extremely fresh, although but few boxes were staged.

There were five entries in the class for six Show varieties in pots not exceeding 8 inches in diameter. Mr. James, gardener to W. F. Watson, Esq., Redles, Isleworth, deservedly obtained the highest position with very handsome specimens of *Mary Hoyle*, *Prince Leopold*, *Archduchess*, *Snowflake*, *Princess of Denmark*, and *Pompey*. Mr. J. Wiggins was second with compact but smaller plants; flowers good. Mr. C. Hammond, gardener to F. Hunt, Esq., Stamford Hill, was third with rather poor plants, and Mr. Charles Turner was fourth. There were four exhibitors in the corresponding class for Fancy varieties. Mr. J. James secured the first prize with large and profusely flowered specimens. The varieties were *Ellen Beck*, *East Lynne*, Mrs. Alfred Wigan, *Mirella* (very fine), *Princess Teck*, and *The Shah*. Mr. Charles Turner followed with small plants, Mrs. Pope and Mrs. A. Wigan being the best. Mr. James Weir, gardener to Mrs. Hodgson, Hampstead, was third with indifferent plants.

In the class for six Show varieties not in commerce Mr. Charles Turner, Slough, was placed first with small but well-flowered plants. His varieties were *Amethyst* (Bréhaute), a neat flower, good habit; three lower petals bright purple, two upper extremely dark with a lighter margin. *Constance* (Matthews), flower large and well formed; three lower petals pink, upper maroon, white throat. *Bertha* (Matthews), small flower, bright salmon pink, white throat; dark upper petals. *Nero*, pinkish crimson; neat flower. *Osman Pacha*, lower petals reddish pink, upper very dark, white centre. *Joe*, bright pink; upper petals dark, white centre; large and good, very floriferous. The three latter varieties were also raised by Mr. Matthews. E. B. Foster, Esq., Clewer Manor, Windsor, was awarded the second prize. His varieties were extremely good, but the plants were rather poor. *Fireball*, good formed flower, very bright scarlet, dark blotches in the centre of the two upper petals; white throat. *Renown*, good flower; dark upper petals, and the lower reddish pink. *Mountain of Light*, bright scarlet; dark upper petals; small flower. *Hector*, vermilion lower petals, dark upper. *Valiant*, salmon; lower petals vermilion, upper dark; finely formed flowers. *Prince Imperial* maroon upper petals, lower crimson streaked with a dark shade. These were the only two collections staged.

In the class for six decorative Show varieties not in commerce the first prize fell to Messrs. J. and J. Hayes, who staged the following good varieties: *Madame Favart*, neat truss; flower fringed pink; dark blotch on upper petals. *Princess of Wales*, white streaked with lake. *Maid of Kent*, white; pale pink spots on upper petals. *Black Prince*, dark maroon edged with white. *Harlequin*, scarlet; dark upper petals. *Lady Isabel*, pale purplish pink; upper petals marked with dark blotch. This was the only collection, and the plants were very good though of medium size. In the corresponding class for Fancy varieties Mr. Charles Turner, the only exhibitor, was awarded the chief prize. The varieties were all pink or pink shaded. *Murio*, *Jannette*, *Polar Star*, Mrs. Milne, *Home*, *Sarah Bernhardt*, and *Touchstone* very neat and pretty.

In the class for eighteen (Show type) decorative Pelargoniums Messrs. J. & J. Hayes, Edmonton, were first with even and well-flowered plants, of which the best were *Duchesse de Morny*, *Duchess of Edinburgh*, *Integrity*, *Bridal Bouquet*, and *Maid of Kent*. Mr. J. Wiggins, gardener to Henry Little, Esq., Hillingdon Place, Uxbridge, was second with much smaller plants, but the flowers were fine, particularly those of *Startler*, *Miss Bradshaw*, and *Triomphe de St. Mande*. Mr. Meadmore, The Nurseries, Romford, was third with vigorous but poorly flowered plants.

For eighteen Zonal varieties, arranged effectively, Mr. C. Bureley, The Nursery, Brentwood, was placed first with vigorous and well-coloured plants. Miss Watson, Mars, and MacMahon were noticeable. Mr. Meadmore was second with an even and well-arranged collection. For nine Zonal varieties in 8-inch pots Mr. John Catlin, gardener to Mrs. Lermite, East End, Finchley, secured the first prize with good well-flowered and even plants. The best were *Lizzie Brooks*, Mrs. Catlin, *Titania*, *Lucy Bosworth*, *Ellen*, and Mrs. Pearson. Mr. Meadmore was placed third,

and Mr. C. Bureley fourth. In the class for nine double Zonal varieties Mr. J. King, gardener to J. Simpson, Esq., Wray Park, Reigate, was first with good plants—large trusses, and very bright in colour. Wonderful, Lucie Lemoine, C. H. Wagner, and Victor Hugo were excellent in all respects. Mr. John Catlin was second with fair specimens, followed by Mr. Meadmore.

Only one exhibitor appeared in the class for six Zonals not in commerce. Dr. Denny was awarded the first prize for the following varieties: *Allegre*, a good pink, large flowers; *Romeo*, scarlet, enormous flower and truss; *Leander*, bright salmon; *Zanoi*, crimson-scarlet, somewhat loose truss but very fine flowers—in fact, all of the varieties were remarkably good. The same noted raiser and patron of the Pelargonium staged the only collection in the corresponding class for four double Zonals. The varieties here were also very good: *Stability*, fine scarlet, large truss; *Pioneer*, rather lighter in colour, but otherwise similar to the preceding, as was also *Gorgeous*; *Refinement*, aptly named, white tinged with pink. The first prize was awarded. In the class for twelve Zonals in 6-inch pots Mr. John Catlin led the van with well-flowered plants of *Cymbeline*, G. Rawlings, *Orlande*, and *Maggie Barrett* among many others. Mr. Wiggins was second with small plants, and Mr. Moorman, gardener to the Misses Christy, Coombe Bank, Kingston-on-Thames, third. Mr. J. Wiggins secured the first prize with the only plant staged in the class for one Zonal Pelargonium not in commerce. The variety was *Rosa Sillen*, a well-formed flower, good scarlet, rather loose truss, but compact habit.



Fig. 3.—*Aotus villosa* (see page 22).

**CUT FLOWERS.**—For twelve double Zonals, three trusses of each, Mr. Thos. Taylor, gardener to J. McIntosh, Esq. (the President of the Society), Duncroon, Otlands Park, Weybridge (the only exhibitor), was awarded the first prize for good and fresh blooms of *Guillon Mangilli*, *Madame Thibaut*, *Le Nord-Est*, *Victor Hugo*, *Lafayette*, *L'Année Terrible*, *Madame Amelie Baltet*, *Noemie*, C. H. Wagner, and J. C. Roddard. The same exhibitor also obtained a similar award in the class for twelve Zonal varieties. The most noticeable were *Brutus*, *Jealousy*, Mrs. Newdegate (fine), *Evening Star*, Mrs. Pearson, and Charles Smith, all in good form.

For twenty-four Show varieties Mr. Charles Turner was placed first with large and well-coloured flowers. The principal varieties were *Emily*, *Prince Rupert*, *Crusader*, *Invincible*, *Sylvia*, *Dauntless*, *Amethyst*, *Champion*, *Despot*, *Negress*, *Lord of the Isles*, and *Illuminator*—a fine collection. Mr. Meadmore's flowers were also fine, and merited the second prize which was awarded for them. For twenty-four Zonal varieties Mr. H. Cannell, Swanley, Kent, was first with extremely fine flowers. The varieties *Marmion*, *Livingstone*, *Lizzie Brooks*, Mrs. Wright, and Mrs. Clifton were excellent. Mr. Cannell was also first with twenty-four double Zonals; the flowers were very good. *Roi des Violettes*, E. Chretien, and *Cremeux* were the best. Mr. Meadmore followed very closely in both classes.

**MISCELLANEOUS.**—Several attractive groups of plants were arranged in the large central tent; these we can only notice briefly. Gold medals were awarded to the following:—Messrs. John Laing and Co., Forest Hill, for a large and beautiful group of *Tuberous Begonias*, associated with *Ferns*, *Palms*, *Dracænas*, and *Caladiums*. To Mr. Wills, Onslow Crescent, for a handsome arrangement of

foliage plants relieved by few Orchids and fine Gloxinias; and to Mr. B. S. Williams for a splendid group of stove and greenhouse plants. Silver Banksian medals were secured by the following exhibitors:—Messrs. Cutbush & Sons, Highgate, for a group of greenhouse and foliage plants, in which a fine plant of *Phenacoma prolifera Barnesii* was noticeable; Messrs. Hawkins and Bennett, Twickenham, for groups of *Pelargoniums Vesta*, *Madame Thibaut*, and *Madame Vaucher*, arranged with *Adiantum cuneatum*; Messrs. Osborn & Son, Fulham, for a group of Ferns and Palms; Messrs. Hooper & Co. for a collection of succulent and foliage plants; Mr. Robert Parker, Tooting, for a fine group of hardy plants and cut *Pæony* blooms; Mr. Boller, Kensal New Town, for a collection of Cacti; Mr. Hooper, the Vine Nursery, Bath, for a collection of cut flowers of Pansies, Pinks, Pæonies, and Ranunculuses; Messrs. A. Smith & Son for a group of *Pelargoniums* and foliage plants. Messrs. T. Rivers & Son, Sawbridge-worth, were awarded a silver Knightian medal for a fine group of fruit trees. Messrs. Barr & Sugden secured a silver-gilt Flora medal for an extensive collection of hardy plants, and cut blooms of Irises and Lilioms. Mr. James Marcham, Isleworth, was awarded a bronze Banksian medal for a collection of very fine single-flowered Petunias. The fountain and rockery arranged by Messrs. Dick Radcliffe & Co., Holborn, was highly commended; and the bouquets from Messrs. Smith & Larke, Florists, Kensington, were also commended. Many plants were sent from the Society's gardens at Chiswick; also a large collection of Lettuces.

A beautiful box of cut flowers of Lilioms from the collection of James McIntosh, Esq., Duneevan, comprising longiflorum, Humboldtii, fine; Krameri, excellent; testaceum, creamy, massive; pardalinum, Robinsonii, very attractive; philadelphicum, matogon album, dalmaticum, and some varieties of umbellatum, were much admired.

#### SPECIAL PRIZES.

The prizes offered by Messrs. John Laing & Co. for nine Tuberous Begonias were secured by Mr. J. Tong, The Gardens, South Lodge, Southgate; and Mr. Luff, gardener to R. K. Hyatt, Esq., Mount Ephraim Road, Streatham, in the order named. Mr. Tong's plants were remarkably well grown, some being trained rather flatly but not formal, and were 2 to 3 feet in diameter, others being more upright, 2 feet high and through, and all fine in foliage and flowers. The varieties were Hecla, President, Kallista, The Shah, Acme, Stromboli, Comte de Hemptonne, Emperor, and Professor Barvenich. Mr. Luff's plants were somewhat drawn.

**VEGETABLES.**—These were well exhibited for the prizes offered by Messrs. James Carter & Co., Sutton & Co. (postponed from the summer show), and Hooper & Co. The competition was good in the class for thirteen dishes, prizes of £7, £5, and £3 being offered by Messrs. Carter. Mr. G. T. Miles, gardener to Lord Carington, Wycombe Abbey, secured the first position with a very fine collection, consisting of Stamfordian Tomatoes, splendid; Nantes Horn Carrots, fine; Seville Longpod Beans, Unique and William I. Peas, White Naples Onions, Telegraph and Tender-and-True Cucumbers, Early London Cauliflowers, Improved Lapstone Potatoes, Wycombe Abbey Brown Cos Lettuce, Canadian Wonder Beans, and Early Snowball Turnips. Mr. Iggulden, gardener to R. B. Wingfield Baker, Esq., Orsett Hall, Romford, was placed second with a generally good collection; Mr. R. Phillips, gardener to Captain Jackson, Meopham, third; and Mr. T. Haines, gardener to the Rt. Hon. Earl of Radnor, Coleshill House, Highworth, fourth. An extra prize was given by the Messrs. Carter to Mr. H. Marriott, Skirbeck, Boston, who was disqualified on account of staging a deficient dish of Tomatoes.

Mr. W. Iggulden was the only competitor for the prizes offered by the Messrs. Hooper & Co., Covent Garden, for a collection of twelve dishes, to include Hooper's Round White and Covent Garden Perfection Potatoes, Market Favourite Peas, Hooper's Favourite Onions, Covent Garden Mammoth Cauliflowers, Acme Tomatoes, and Hooper's Nonsuch Turnips. In addition to these Mr. Iggulden staged Paragon Cucumbers, Early Horn Carrots, White Advancer Beans, Heartwell Marrow Cabbage, and Globe Artichokes, the latter being very fine. The whole collection was very creditable and secured the £5 prize, but the date was too early for some of the vegetables stipulated. One grower only, Mr. Marriott, competed for the special prizes offered by the Messrs. Carter for one dish each of Culverwell's Telegraph, Carter's Telephone, Carter's Little Wonder, and Carter's Challenger Peas. The pods were very fine but far from being well filled. The first prize was awarded.

Mr. Iggulden was the only competitor for the special prizes offered by the Messrs. Sutton and Sons for six varieties of Peas and was awarded the first prize, a silver medal and £2, for good dishes of Sutton's Ringleader, Caractacus, William I., Harbinger, The Shah, and Unique. Great complaints were to be heard on all sides of the difficulties experienced in the kitchen garden, especially with regard to the Pea crop.

Near the vegetables Mr. Miller, Clumber, staged a very fine Melon named William Tillery, which was recently awarded a first-class certificate by the Fruit Committee. Mr. Goodacre, Elvaston

Castle, Derby, staged two very highly coloured dishes of Early Grosse Mignonne Peaches and Lord Napier Nectarines.

**FRUIT COMMITTEE.**—Henry Webb, Esq., V.P., in the chair. Mr. Wildsmith, gardener to Lord Eversley, Heckfield, exhibited thirteen Melons, the produce of three plants grown in a root space 5 feet long by 18 inches wide and the same in depth. They were of medium size, and appeared to be well ripened. The variety was Earl of Beaconsfield, and a cultural commendation was awarded. Mr. B. Morrell, The Cedars, Richmond, sent a seedling Melon (Morrell's Scarlet), which was over-ripe and mealy, but in a favourable season would probably possess fair flavour. Mr. Bailey, Shardeloes, and Mr. W. Irwin, gardener to Lord Howard, Glossop Hall, also sent seedling Melons; that from the former was passed, and the one from the latter was found to be unripe. Mr. Stevens, gardener to A. Bouverie, Esq., Delapré Abbey, and Mr. J. Martin, Manor Farm, North Cray, exhibited seedling Melons. Mr. Gilbert of Burghley sent two fruits of Netted Victory Melon, this time netted naturally. One was green-fleshed with a dark green rind, and the other yellowish with a yellow rind, which raises the question as to which is the true Netted Victory. He also sent a Melon of good flavour, selected from Lord Beaconsfield. A letter of thanks was accorded. Mr. Parkins, gardener to C. Keyser, Esq., Stanmore, exhibited a large Providence Pine Apple weighing 10 lbs., the produce of a rootless sucker planted August 12th, 1878. A cultural commendation was awarded. Mr. Jarvis, gardener to J. Edwards, Esq., Blackheath, exhibited a dish of Peaches, and was accorded a vote of thanks. Mr. Goodacre, The Gardens, Elvaston Castle, and Mr. Coomber, gardener to Col. Wilkinson, received a similar mark of recognition; the former for six dishes of seedling Potatoes, the variety to be tried at Chiswick, and one dish of Northern Greening Apple; the latter for a twin Cucumber (Telegraph). Mr. John Spaven, Ulverston, sent some fine Royal George Peaches and Eriuge Nectarines. Mr. Dean sent some Peas as grown singly in 7-inch pots; the haulm was well covered with good pods. The varieties were Robert Fenn and Dean's Dwarf Marrow, and they were to be tried at Chiswick, as they appeared adapted for forcing.

**FLORAL COMMITTEE.**—Dr. Denny in the chair. A number of plants were exhibited for certificates, principally from Messrs. Veitch & Sons, Chelsea, Messrs. John Laing & Co., Forest Hill, and Messrs. J. & J. Hayes, Edmonton. The following first-class certificates were awarded: To Messrs. Veitch & Sons for a beautiful Tuberous Begonia Constance Veitch; flowers neatly formed, very dark scarlet, compact. Several other handsome Begonias were also exhibited by this firm. *Rhododendron Duchess of Teck* was certificated (first-class). The flowers are pale cinnamon coloured, rather small, but finely formed. To Messrs. J. Laing & Co. for the Tuberous Begonia Mrs. Howe, flower large, pale orange, vigorous habit; and *Reine Blanche*, flower of medium size, pure white, beautiful. To Messrs. J. & J. Hayes for a decorative *Pelargonium* (Show type), Princess of Wales, large flowers, crumpled petals streaked with lake, white throat. To Mr. King, gardener to J. Simpson, Esq., Wray Park, Reigate, for *Coleus Maude*, leaves streaked with red, yellow, and green. To Mr. H. Cannell, Swanley, Kent, for a Tuberous Begonia Edouard Morren, a double scarlet flower of extraordinary size. To Mr. C. Edmonds, Hayes and Hillingdon Nurseries, Middlesex, for a Tricolor *Pelargonium* Henry Cox, an extremely good variety, compact habit, neat foliage, and rich dark colour. To Mr. Frederick Perkins, nurseryman, Leamington, for a Show *Pelargonium* as a decorative plant, named *Volunté National*; flower neat but small, white blotched with pink in the centre of the petals. To Messrs. Paul & Son, Chesham, for the Rose Duke of Teck, which is described in our report of Alexandra Palace Rose Show. A vote of thanks was accorded to Mr. H. Heims for *Cypripedium niveum giganteum* and *Dendrochilum filiforme*, also to Messrs. Barr for *Pyrethrum*.

#### CHRYSANTHEMUMS.

THE present season so far has been a very favourable one for Chrysanthemums. Autumn-struck plants which received their final potting three or four weeks ago are now established and are growing strongly, being specially encouraged by the damp weather. Spring-struck plants are now being potted; they are a little more pot-bound than they ought to be, but owing to other pressing work we could not find an opportunity for earlier attention to them. Aphides have made their appearance on the points of the shoots, and our mode of destroying them is by mixing tobacco water and clean water in equal parts, and letting it drop from a piece of sponge into the centre of each point, two doses generally prove sufficient. We find the best time to apply this antidote is in bright sunshine, as it is then more effectual than if put on in the morning or evening.

As soon as the shoots are long enough they should be staked individually. This we find gives the wood a better chance of



ripening than tying them all to one central stake. We retain from four to six main shoots. The variety *Eve* when intended to bear large blooms should receive a June pinching. This causes it to produce a finer shoulder or crown bud with a longer period for development. Growers will soon be looking forward to the several extra contests which are to take place this year, particularly at Kingston and Birmingham.—HUGH ELLIOTT.

### CHOICE ZONAL PELARGONIUMS.

No plants are more deserving of the appellation "all the year round plants" than are these, and no one has done so much to establish that position for them as Mr. Cannell. During every month of the year he has exhibited magnificent stands of cut blooms at South Kensington, and it is impossible to visit Swanley at any time without seeing a display of these deservedly popular plants that may justly be described as startling. On entering one of the hundred-feet-long structures (of which several are devoted to the different types of Pelargoniums), the visitor naturally commences to "pick out" the best varieties. This, where all are so good, is no easy task, but the following in the single Zonal house are a few of the best of the newer varieties that are not yet so familiar to the public as they no doubt will be. At any rate their merits entitle them to be grown everywhere.

One of the first to attract by its luminous brightness is *Guinea* (Parker). This by its decided glow of yellow puts Jealousy and all others of its hue quite out of court. H. M. Pollett, also raised by Mr. Parker, commands attention by its rich glowing crimson colour and clear white eye. Lord Giffard, one of Mr. George's finest productions, is a grand variety, combining high quality of flower with richness of colour, scarlet suffused with crimson, in a remarkable manner. George's General Grant, rich crimson, is a variety of great excellence. Dr. Denny (Sisley), is yet the richest of all in its decided purplish tint and orange markings. In fine contrast is Pearson's Sophie Birkin, a splendid salmon, in colour charming, in shape about faultless. Some other varieties by the same renowned raiser also command attention, notably Lady Bayley, rich magenta pink, beautiful, and highly distinct. Henry Jacoby (semi-Nosegay), intense deep crimson. Mrs. Ward, purplish pink, dwarf, fine truss, striking. Lizard, rosy salmon, scarlet centre, fine. H. H. Crichton, glowing crimson, white eye, free; and Aphrodite, rosy cerise, top petals scarlet, large truss. Amongst Dr. Denny's varieties (which are notable for their substance of petal and excellence of form), the following demand notice:—*Titania*, rich crimson, white eye; *Zuleika*, purplish magenta, distinct; *Madonna*, rosy salmon; *Sunbeam*, intense scarlet; *Gnome*, brilliant orange scarlet; all of which are of decided merit. Amongst somewhat older varieties the following are distinct and fine:—*Heather Bell*, *Lady Eva Campbell*, *Mrs. Wright*, *Mrs. Pearson*, *Burns*, *Mrs. Davidson*, and *Lady Sheffield*. The best single white variety is *Jeanne d'Arc*; all the varieties of *Vesuvius* being indispensable for winter decoration and bedding.

A few of the finest doubles—the plants being dwarf and flowers fine—are, amongst *Scarlets*, F. V. Raspail, Louis Barthière, and Gambetta. *Rose and Pink*—Emile de Girardin, and Madame R. Guerrin (Croux). *Purplish Pink*—Le Main (Gerbeau), Littre, and Duparte Viox (Kœmpler). *Salmon*—Victor Hugo, Casimir Perrier, and La Constitution. *Whites*—*Candidissima plena*, very fine (Boutard), Madame Thiers, and Madame Baltet; *La Nympha*, a fine variety certificated last year, I did not see in bloom at Swanley. All the varieties not otherwise mentioned were raised by M. Lemoine, and it only remains to be said that they are worthy of him and of Swanley, and therefore of all cultivators of this pre-eminently useful class of plants.—VISITOR.

### BRENTWOOD HORTICULTURAL SOCIETY.

THE weather has hitherto been singularly favourable on the occasions of this Society's Summer Show, but that held in the pleasantly situated grounds of F. Willmott, Esq., Warley Place, on July 1st, was a very unfortunate exception to the rule. The display was a very good one and the arrangements excellent; both, however, were completely marred by the very stormy weather experienced. The various classes for plants were well filled, and some of the specimens were very good indeed. The premier prize, a silver cup for twelve stove or greenhouse plants, was easily won by Mr. Miller, gardener to A. Canning, Esq., Halstead. This collection included large specimens of *Pandanus utilis*, *Latania*,

*borbonica*, *Crotons variegatum* and *elegantissimum*, *Erica Candolleana*, &c. Mr. Bones, gardener to D. McIntosh, Esq., Havering Park, Romford, was placed second in this class, first for flowering, and also foliage plants, Pelargoniums, &c. Other successful exhibitors were Messrs. Wise, gardener to W. A. Ogg, Esq.; North, gardener to A. Willmott, Esq.; Bradley, Bishop, Foid, Meadmore, &c. The latter staged six unusually well-grown specimens of double-flowering Pelargoniums, the varieties being *Guillaume Mangilli*, *Lucie Lemoine*, *Fille d'Honneur*, *Asa Gray*, *Madame Thibaut*, and *Pyrites*. Table plants were largely and well shown; the first-prize group included plants of the extremely graceful green-foliage plant *Casuarina sumatrana*.

The tent devoted to cut flowers and fruit was very attractive, the display for the year being very good. Mr. Cant. Colchester, was very deservedly awarded the first prize for forty-eight cut roses. His best blooms were *Devoniensis*, *Hippolyte Jamain*, *Mons. Noman*, *Princess Mary of Cambridge*, *Comtesse de Paris*, *Prince Arthur*, *Mons. Etienne Levet*, *Maréchal Niel*, *Ville de Lyon*, *Capt. Christy*, and *Général Jacqueminot*. In the amateurs' class for twenty-four roses Mr. Edwards, gardener to the Rev. Canon Tarver, was placed first, he being closely followed by Mr. W. Harrington, gardener to E. Mitchell, Esq., Romford. The best blooms in the former's stand were *Countess of Oxford*, *Charles Lefebvre*, *Duke of Edinburgh*, *Dupuy-Jamin*, and *Général Jacqueminot*; and in that of the latter *Anguste Rigotard*, *Duchesse de Morny*, *Maurice Bernardin*, *Jean Pernet*, and *Camille Bernardin* were very good. Mr. Edwards also secured the first prize for a stand of twelve blooms of any one variety with fair examples of *Souvenir d'un Ami*. An excellent stand of *Gloire de Dijon* was unaccountably passed in this class, the prizes going to less fresh and less even stands. Some of the exhibits were very fair in the smaller classes; the best single bloom, a fine specimen of *Général Jacqueminot*, was staged by Mr. Cant.

The best collection of four varieties of fruit was staged by Mr. Bones. The *Violette Hâtive* Peaches both in this class and also in that for Peaches were very fine indeed. Mr. Farrance, Chadwell Heath, staged the best Black Hamburg Grapes, and very little inferior were those which gained Mr. Simpson the second prize. White Grapes were poor, and no prize was awarded for a Melon. Strawberries were staged in fair quantities, the dish of Sir Charles Napier exhibited by Mr. Farrance being very fine.

Vegetables were fairly well shown both by the gardeners and cottagers. Among the former Mr. W. Iggulden, Orsett Hall, Romford, was the most successful; his collection of eight varieties being good, notably the Tomatoes, Onions, Carrots, and Cauliflowers.

### NOTES AND GLEANINGS.

IN consequence of the almost continuous rains that have lately prevailed BEDDING-OUT IN THE LONDON PARKS has been much interrupted, and the work is not yet finished. Much damage has been done to the plants that were planted early in June, *Alternantheras* and such like plants being much battered by drenching rain and greatly cut by hail. The hailstones have also considerably injured the fronds of Palms and fine-foliaged plants, giving them a spotted appearance from which they will not soon recover.

— WE have received from Mr. George Lee, Clevedon, some leaves of POTATOES and MOSS ROSE BUDS with the accompanying note—"The blotches on the Potato leaves first appeared nearly a month since, but the decay is now spreading rapidly, and if this weather continues it will, I fear, be most serious. The first appearance of the discolouration was confined to some 3 or 4 yards, but it has now made its progress to others quarters, and I hear that others are suffering greatly, too, here and in the neighbourhood. The enclosed Moss Rose buds will show you how much we have suffered from the wet; the mossy part, not dry for several days, eventually gives way and rots as you see."—[The leaves and buds are truly in a sad state—almost entirely rotten, and afford conclusive evidence of the extreme inclemency of the season.]

— A CORRESPONDENT communicates the following in reply to "W. L." on CLEARING MEALY BUG FROM GRAPES:—"I find the best way to clean bunches of Grapes from mealy bug is with methylated spirit and a moderate-sized camel-hair paint brush. Dip the brush in the spirit and just touch either bug or eggs; it is done at once, as the spirit quickly runs all over them. I used it for the Vine, as well. I do not find any injury from the spirit except in tender plants and very young growths; but the Vines and bunches must be looked over constantly, as it is impossible to get rid of the pests at once."

— WRITES a Sligo correspondent, "I have read with very great interest the paper on IRISES on page 471. We have grown Irises here in a small way during the last three years,

mixed varieties—the Spanish and German Irises, and nothing can be more lovely than the “high art” colouring in all the flowers. The most beautiful shades of olive green, golden brown, pale yellow, pale violet, and a rich bronze or copper colour, they are quite like Orchids in their uncommon and weird arrangements of colour. The season is so late this year that the Irises are only just coming into bloom.”

— WE are requested to state that the prize offered at the NATIONAL ROSE SOCIETY'S SHOW at the Crystal Palace by G. P. Hawtreys, Esq., for three trusses of any new seedling Rose not in commerce, and for which there were no entries, may be competed for at the Society's Provincial Show at Manchester on the 19th.

— FOR some weeks past the RHODODENDRONS exhibited by Mr. Anthony Waterer of Knaphill, Surrey, at the Royal Botanic Society's Garden, Regent's Park, have been extremely beautiful and many still retain their flowers, although the majority are past their prime.

— WE have received from the Rev. F. Tymons a spike of a very beautiful DELPHINIUM. The flowers are rich dark blue in colour, and as they are borne on wire-like pedicels 5 inches in length, are useful for bouquets, &c. The main stem is very strong, and the whole plant must have a rich and stately appearance. It resembles a variety which we have seen in Belgian nurseries and a few English gardens under the name of *atro-purpureum*, and is unquestionably a very fine border plant.

— A CORRESPONDENT sends us the following note on the BROCKHAM ROSE SHOW:—“Like the rest, this Society had altered its show day. It was changed from June 26th to July 4th. Even this date proved at least a week too early. After being driven by the elements from Mickleham Park, the Association wisely took refuge in the Dorking Public Hall. The room, a magnificent one, was decorated with banners, and at one end with a grand mass of various flowers furnished by Mr. Appleby of Box Hill Nurseries. Considering the season the Show was exceptionally good, and received the warm commendation of the Judges (the Rev. A. B. Alexander and Mr. George Paul of Cheshunt) as the best local Show of the year so far. The first prizes for twenty-four, twelve, and six of any kind were taken by Lady Lawrence, F. T. Wollaston, Esq., and G. C. Stone, Esq.; the first for twelve Teas by the Rev. A. Cheales, and for six Teas by F. T. Wollaston, Esq.; also prizes for table decorations by Miss Fuller. The National Society's silver medal was won by a Duke of Edinburgh, H.P. (Rev. A. Cheales); and the Society's bronze medal by a Maréchal Niel (H. Stilwell, Esq.).”

— AMIDST the complaints of the lateness of the STRAWBERRY SEASON and the scarcity of fruit in the markets we are informed on good authority that one grower in Essex a fortnight ago sent three tons of fruit to market, and realised a very high price for them. The variety is Alice Maud, that was once more popular in gardens than it is now. It is an early, hardy, and productive variety.

— THAT beautiful Orchid *THUNIA BENSONIÆ* is now flowering in the Orchid house of the Royal Botanic Garden, Regent's Park. It is bearing two short racemes of four flowers each, and the latter, which are slightly pendulous, appear nearly level, owing to the short internodes. The sepals and petals are an extremely delicate pale purple, the labellum being much darker in hue. The plant is a native of the mountains of Moulmein, and requires the temperature of an East Indian house and abundant supplies of water during growth. In the same house *Oncidium cornigerum* was noticeable for its fine spike of yellow flowers. In the Water Lily house the *Victoria Regia* appears vigorous and healthy, with the exception of a few spots on the older leaves, but there is at present no signs of flowers. Trained to the roof is *Allamanda nobilis*, which now has several fine flowers of excellent colour and form.

— BARON DE HUBNER visited Kiyoto in Japan, and says that there JAPANESE GARDENING is in the greatest perfection, and reaches the utmost limits of the grotesque. A colossal Pine is turned into a boat; the trunk being the mast, the upper branches forming the yards, and the lower branches the oars.

— WE recently noticed in the PINE APPLE NURSERIES, Maida Vale, some young plants of *Odontoglossum vexillarium*, especially noticeable for their extremely fine flowers. Several Stanhopeas were in good form, particularly *S. saccata* and *S. insignis*, the peculiar flowers of which are very striking.

We noticed a batch of remarkably vigorous *Thunias* which will shortly be in full beauty; most of the species are grown, but the majority is of *T. Bensoniæ*. Three plants of *Lilium giganteum* were very fine with enormous flowers. The pure white form of *Agapanthus umbellatus* was also flowering freely, and very distinct it is. *Hæmantis Kalbreyeri* was very brilliant, and small plants were flowering abundantly. Among many other noteworthy plants we observed *Masdevallia Harryana purpurea*, flower good and colour distinct; also the beautiful *M. atro-sanguinea*. *Sonerilas* and *Anæctochilus* were as usual in excellent condition, and the large quantities of *Fuchsias* and miscellaneous softwooded plants here grown indicate a careful and efficient system of cultivation.

### EFFECTS OF THE WINTER IN WALES.

It may interest your readers to be informed of the effects of the late winter in this mild climate. We are upon the west side of Merionethshire, about three miles from the sea.

A plant of *Mandevilla suaveolens*, on the south-west side of the house, which had attained a height of 24 feet, is, I fear, quite killed. Till this year it had never been protected. Upon raising the bark it is green, but shows no symptoms of growing.

All the *Eucalypti* are irrecoverably lost. One in two years had attained a height of 14 feet. A very large plant of *Passiflora* flower is destroyed; but at the bailiff's house, about half a mile off, and at a cottage in the village, they are recovering.

All the plants of *Lobelia fulgens* are gone, and a very pretty trailing *Convolvulus*; we called it *Convolvulus argenteus*, but I suspect that it is not the right name. It had been here for nineteen years. The plants of *Calycanthus floridus*, which have been here for many years, are all destroyed. All the *Veronicas* are gone.

The *Camellias* out of doors are little or none the worse, and the double ones out of doors this spring flowered luxuriantly. One of the *Myrtles* looks very bad, but a very large one is little injured. The *Hydrangeas* have not suffered, and promise to flower well.

At Wynnstay in Denbighshire, the seat of Sir W. Williams Wynn, Bt., more rain fell in the last month than in any June but one since 1868 inclusive. The rainfall last month was 5.29; the nearest approach to it—but in 1872, when it reached 5.73—was in 1871 and 1875, when it amounted to 3.21 and 3.73. Last month at Wynnstay it rained upon twenty-six days; at Nannan Park Gardens in this county the fall was 7.60 in June; here it was 5.51. A plant of *Lapageria rosea* is none the worse. The show of wall fruit is very good. —W. W. E. WYNN, *Peniarth*.

### CANTERBURY ROSE SHOW.—JULY 3RD.

HURRAH for the old city! I thought when I saw the spirit which pervaded that meeting at the “Rose” some months ago and by whom the cause of the young Society was taken up, and that two such Secretaries as Mr. Biron and Mr. Mount were ready to give it the benefit of their services, that something would come of it, although horticulture seemed at so low an ebb and existing societies so feeble. But I was not prepared for such a summer or such a season, and I am sure that my excellent friend Captain Lambert, who was Chairman, was nearly as well pleased as when he sees his favourite candidate at the head of the poll; and that Mr. Biron hardly knew which made him more happy, the success of the Exhibition generally or his own prowess, by which he carried off three first prizes and both of the medals of the National Rose Society, while Mr. Mount must have indeed been gratified at the large and fashionable attendance and the good balance he would have in hand for the coming year.

Let me say that the Exhibition was held in the very best room for the purpose I have ever seen—the Corn Exchange, long, narrow, and lofty, and lighted by skylights which were softened by canvas stretched across them. Nothing could have been better. There was abundance of room for promenading, and the end was filled with a table containing the vases entered for competition and a very handsome collection of silver and gilt flower vases exhibited by Mr. Mason, the well-known silversmith of High Street, whose taste is celebrated throughout the county; and at the other end were some pretty cachepots, the manufacture of Mr. Philpot, which are, I think, likely to be much appreciated.

Tea Roses were shown in splendid condition. In the open class for twelve the first prize was carried off by Mr. Mitchell of Pilt-down with *Madame Willermoz*, *Maréchal Niel*, *Souvenir d'Elise*, *Marie Van Houtte*, *Comte de Paris*, *Madame Margottin*, *Devoniensis*, *Duc de Magenta*, *Adam*, *Josephine Malton*, *Jean Pernet*, and *Souvenir d'un Ami*. Mr. Cant was second with a box of almost equal merit, containing *Rubens*, *Devoniensis*, *Madame Willermoz*,

Souvenir d'Elise, Moiré, Céline Forestier, Madame Riza du Parc, a most lovely new Rose; Caroline Kuster, Maréchal Niel, Souvenir d'un Ami, Madame Bravy, and Marie Van Houtte. Messrs. Kinnont & Kidd were first in the open class for thirty-six distinct trusses. Amongst the blooms were fine examples of Elie Morel, Madame Emma All, Marie Baumann, Madame Lacharme, Duke of Edinburgh, Duchess of Vallombrosa, Fisher Holmes, Marquise de Mortemart, Mons. Fillion, Prince Camille de Rohan, Etienne

Levet, La France, Felix Genero, Belle Lyonnaise, Sénateur Vaise, Baronne de Rothschild, Annie Laxton, Marguerite de St. Amand, Maréchal Niel, Antoine Ducher, Gabriel Tournier, and Paul Neyron. Mr. Biron's box, which was awarded also the National Rose Society's medal as the best box in the Show, was really grand. It contained Ferdinand de Lesseps, La France, Duke of Edinburgh, Abel Grand, Marie Baumann (this was awarded the bronze medal of the National Rose Society as the best Rose in the Show),



Fig. 4.—CALLISTACHYS LONGIFOLIA (see page 22).

Madame Victor Verdier, Madame Marie Finger, La Rosière, Charles Lefebvre, Capitaine Christy, Lord Macaulay, and Madame Prosper Langier. Mr. Biron also took first prize for a splendid box of six of one sort, Souvenir d'un Ami, large and fine. Mr. Wakeley of Rainham, Mr. Hollingworth of Maidstone, Mr. Peckham, Captain Knight, and other exhibitors also contributed some fine blooms. I subjoin a list of awards.

Any kinds, eighteen varieties, one truss each.—First, Mr. J. Wakeley, Rainham; second, Mr. W. Mount, Canterbury; third, Mr. Edward Neame. Twelve varieties, one truss each.—First, Rev. H. B. Biron, Harbledown; second, Mr. W. Wakeley, Rainham; third, Mr. T. G. Peckham, Hall Place, Harbledown. Six

varieties, one truss each.—First, Mr. J. Verrier, Bridge; second, Mr. George Mount, Harbledown; 3rd, Mr. G. P. Collard, Canterbury.

Tea-scented and Noisettes, twelve varieties, one truss of each.—First, Mr. R. W. Knight, Bobbing; second, Rev. H. B. Biron, Harbledown; third, Capt. W. W. Knight, Wye. Six varieties, one truss of each, Mr. T. G. Peckham.

Any kinds, twelve varieties, three trusses of each.—First, Mr. W. Wakeley; second, Mrs. Warton, Herne Hill. Six varieties, three trusses of each.—First, Rev. H. B. Biron; second, Mr. Thos. Sargeant, Bridge; third, Capt. Lambert, Canterbury.

Six trusses of any Rose.—First, Rev. H. B. Biron; second, Mr. H. R. Peckham, Patricbourne; third, Mr. George Mount.

The National Rose Society's silver medal for the best box of Roses in any of the above classes, and the same Society's bronze medal for the best Rose in the Show, to Mr. H. B. Biron.

One vase or epergne consisting of Roses combined with Ferns or other foliage.—First, Mrs. H. B. Biron; second, Mrs. Bunyard, Ashford; third, Mrs. Warton; fourth, Miss Kinmont, Canterbury.

One button-hole bouquet, consisting of one or more Rose buds combined with other flowers or foliage.—First, Miss Welby, Canterbury; second, Miss Peckham, Harbledown; third, Miss Kinmont.

For nurserymen.—First, Kinmont & Kidd, Canterbury; second, Mitchell & Son, Uckfield, Sussex; third, Mr. G. W. Piper.

Twelve Teas and Noisettes.—First, Mitchell & Son, Uckfield; second, Mr. B. R. Cant, Colchester; third, Mr. T. Hollingworth, Maidstone.

The vases or epergnes of Roses and foliage were very good, especially those of Mrs. Biron, which gained the first prize, and Mrs. Bunyard's, to which the second was awarded. All lovers of the Rose will, I am sure, rejoice at the success of this latest addition to the number of Rose Societies.—D., Deal.

#### MESSRS. CARTER & CO'S ANNUALS AT REGENCY PARK.

THE corridor leading from the large conservatory in the Royal Botanic Society's Garden is at present bright with the extensive collection of annuals exhibited by this enterprising firm, and no visitor to the Garden should fail to see these attractive little plants. They are arranged on a low staging sloping up to the wall, not in formal straight lines, but in a succession of semicircles, which adds considerably to the pleasing effect of the groups as viewed from one end. The colours also are tastefully contrasted, and almost every imaginable shade is represented. Near the wall are clusters of a tall double yellow Chrysanthemum, the brightness of which is agreeably softened by the compact heads of the mauve Schizanthus pyramidalis, variety Tom Thumb. Masses of the brilliant Nasturtiums Tom Thumb Beauty and Tom Thumb Scarlet are relieved by the blue tints of *Kaulfussia amelloides* and its varieties, the pale purple Collins a bicolor, the star-like pink *Saponaria calabrica*, and the numerous shades of *Phlox Drummondii*. At intervals the glaucous foliage of *Melanthus* major appears; and the graceful *Brizas*, *B. maxima* and *B. media*, assist in breaking the monotony of colour, while an edging of the common Musk forms a pleasing finish.

Among the most noteworthy were the following:—*Phlox Drummondii* Napoleon III. with flowers of medium size in large heads and of extremely rich crimson colour; in masses this would be very effective. Another variety was also striking—*Phlox Drummondii* roses, flowers bright pink with a darker eye. *Veronica syriaca* is pretty and diminutive; flowers bright blue and abundant. *Chrysanthemum* The Sultan is showy with intense crimson maroon flowers; Lord Beaconsfield is similar, but larger and brighter. The charming little *Silene pendula compacta* is now past its best, but it has flowered remarkably freely, and is well adapted for pot culture. There were many others which we cannot enumerate; suffice it that four or five thousand pots are staged, and a much greater number is required to replace the plants as they go out of bloom. The exhibition will continue during a portion of the present month.

#### DOUBLE PYRETHRUMS.

It is a wonder everybody who has a garden does not grow Double Pyrethrums. We have dozens of clumps of them at present which are really beautiful, and also extremely useful for yielding cut flowers. Quite hardy, easy to propagate if stock is wanted, easy to cultivate—merely requiring to be planted in a thoroughly enriched soil in the first instance and afterwards let alone. If plenty of flowers are wanted in great variety as regards shades of colour—from purest white and yellow through shades of blush and rose to deepest crimson—this is surely a flower that should be grown in all gardens. We have some new varieties from Messrs. Downie & Laird which appear to be good, but at present it is difficult to say much of them, as the plants, originally very small, have not gained sufficient strength this season to show the flowers at their best.—R. P. B.

WILLIAM I. PEA.—I am very anxious to inform my fellow gardeners that after this trying spring I can with confidence recommend William I. Pea as the earliest and best I know. I

sowed Emerald Gem, Sangster's, Daniel O'Rourke, and Little Gem in February as well as William I., which I gathered the first dish on June 28th. It is the earliest and has the best constitution of any. This will be of use to those who have to supply a good early Pea. This will be sufficient excuse for my troubling you.—JOHN CHESTER, *Gardener to J. M. Heathcote, Esq.*

#### LIVERPOOL HORTICULTURAL ASSOCIATION.

WE were glad to see an announcement in the Journal of the Liverpool Horticultural Association's Show, which is to be held on August 2nd and 4th in Sefton Park. This young Society is entirely due to the energy of the gardeners in the neighbourhood, who were disappointed with the poor shows in St. George's Hall in comparison with those at Manchester, York, Leeds, and many other towns. A summer show in one of the parks was much required by gardeners and the lovers of horticulture generally, and we hope success will attend the efforts of the Committee to promote public interest in their new undertaking. The Association has the patronage and support of the Earls of Derby and Sefton, Col. J. Ireland Blackburne, M.P., and such Vice-Presidents as Sir T. Edwards Moss, Bart., Sir Thomas Earle, Bart., Sir Andrew Barclay Walker, and many other distinguished gentlemen of the neighbourhood, with Thomas B. Boyden, Esq., Mayor of Liverpool, at the head as President.

We consider the first step to the advancement of horticulture in a locality is the formation of a good horticultural exhibition, where the productions of Nature and Art can be brought from distant exhibitions and various localities to be compared with those grown in the neighbourhood. The good culture and skill needed to produce the specimens staged are carried home in the minds of the employer as well as the gardener, thus stimulating both to do likewise.

We wish to inform the readers of the Journal and exhibitors generally, that the object of the Association is to establish a show on a broad and liberal basis, and we give a pressing invitation to exhibitors to compete for the prizes offered in the schedule. Another year it is hoped that still further inducements will be provided for exhibitors in various classes.

The Association when fairly established intends holding meetings for the purpose of reading papers on various practical subjects on gardening, which can scarcely fail being advantageous to gardeners both young and old.—A LIVERPOOL GARDENER.

#### ROSES AT THE TUNBRIDGE WELLS SHOW.

"HEAVY rain in the morning, fine in the afternoon," was a pretty correct forecast of the weather of Friday last, except that the rain of the afternoon, so far from being "fine," was exceptionally heavy, even for 1879; at least, I know my hat, which I had incautiously placed near the entrance while discussing with my fellow Judges the table decorations in the Committee tent, registered 0.33 in the same fraction of an hour.

The Show was held at the Hydropathic Sanatorium. A more charming place cannot be imagined; it would exhaust the superlatives of the most profuse auctioneer. My province, however, is to speak of the Roses. This untoward season has been the opportunity of many an early blooming and of some non-exhibition Roses, and makes me more than ever desirous of seeing a class for Roses not in the seventy-two of the Rose election. Several such were to be seen at Tunbridge Wells, among them Lord Raglan, Madame Derreux Douville, and William Griffiths really beautiful.

For the top class (open, forty-eight) there were three entries, Messrs. Mitchell being first with a very creditable box, of course abounding in Teas; Souvenir d'Elise, Jean Pernet, Josephine Malton (syn. Madame Sertot), and Madame Guillot being superb. A new Rose about to be introduced by this firm was represented by a really beautiful flower, and if not an exceptional bloom it will take a good place as a show Rose. I saw it three years ago at the nursery, and thought it promising. It is a sport from Madame Clémence Joigneaux, quite distinct, of true rose colour, globular form, and with plenty of substance. Its parentage is to be detected in the foliage only. Messrs. Bunyard & Sons were second; and Mr. Piper, with his flowers comfortably if not becomingly couched on his well known green wool, was third. For twenty-four trebles Mr. Piper came first, and the Rev. R. Cox, Hales, second.

The classes for amateurs were good. For twenty-four Mr. F. Warde, West Farleigh, was first; Mr. F. B. Haywood, Reigate, second; Mr. H. T. Lambert, Bletchingley, third. For twelve Rev. Henry B. Biron, Canterbury, took first; Mr. A. Killick, Maidstone, second; Mr. T. F. Burnaby-Atkins, third; and Mr. W. Mercer, Hunton, fourth. The Teas, as usual this year, were



exceptionally good; those of Mr. A. Killick, which stood first, being well grown, especially Madame Falcot, and nicely arranged. The Rev. Henry B. Biron came next; Mr. F. Warde third; and Mr. T. F. Burnaby-Atkins fourth.

In the above list of prize-winners the name of a local grower does not appear. It seems that Rose societies are doing much for the cultivation of the flower, for in the amateurs' classes the first prize for twenty-four, the first three for twelve, and all the prizes for Teas, were taken by members of the Maidstone Rose Club.—H.B.

### TORQUAY ROSE SHOW.

I REACHED Torquay in the midst of a gale of wind and torrents of rain, when I heard that the gale had caught the large tent where the Show was to have been held, had ripped up the canvas, broken the specimen plants, and entirely destroyed all hopes of a Show. The Committee, however, exerted themselves manfully. The Roses being in boxes were safe, and so a Rose Show was held in the Bath Rooms, and a very excellent display considering the season was held. Messrs. Curtis, Sandford, & Co. repeated their triumphs of Saturday, and carried off the chief prizes; their box of seventy-two contained many excellent blooms. Those two redoubtable champions of the West—Mr. Jowitt of Hereford and Mr. Baker of Exeter—entered the lists for the twenty-five guinea challenge cup, and staged admirable collections.

In Mr. Baker's premier stand the following were excellent: Etienne Levet, Duke of Edinburgh, Marquise de Montemart, Madame Prosper Langier, Madame Clemence Joigneaux, Josephine Malton, Magna Charta, the first bloom of it I have ever seen; Souvenir d'un Ami, Mons. Noman, Camille de Bohan, Duc de Wellington, as only Mr. Baker can grow it; Charles Lefebvre and Duke of Connaught. In Mr. Jowitt's were some splendid blooms, especially Général Jacqueminot, in a style one hardly sees it with anyone else; Olga Marix, the finest bloom I have seen of it; Caroline Kuster, Wilson Saunders, Cloth of Gold, fine; Sultan of Zanzibar, very good; Maréchal Niel, Devonensis, and Marie Rady. Mr. Curtis exhibited some fine boxes of La France, Marie Baumann, François Michelin, and Baronne de Rothschild.

Anything more cold and cheerless than Torquay on the 1st of July could not possibly be. I could not help contrasting it with my last visit, when all was bright and warm and its loveliness was seen to perfection, while the condition of the low-lying lands between it and Exeter was deplorable. And now as I write on the 5th there seems little hope of a change, and things look gloomy enough for all interested, not only in gardening pursuits, but in the material prosperity of our land. Assuredly this year of grace 1879 will long be remembered, and that with no pleasant or sunny memories.

I also visited Mr. Radclyffe's garden, notes on which must be deferred.—D., Deal.

### WORK FOR THE WEEK.

#### KITCHEN GARDEN.

THE Tripoli section of Onions for late spring and early summer use is so well known for its superiority as to need no comment. Prepare at once the ground intended for this important crop. The Onion luxuriates in a deep rich soil, and a tenacious soil is preferable to a light soil. The ground will be in capital order for sowing Onions after Cauliflowers, and it will merely require forking over. The principal crop should not be sown until the early part of August; but a sowing may now be made to afford a supply of young Onions in spring, giving preference to the White Lisbon and White Naples. Make a liberal sowing of Lettuce for a late supply and, if necessary, for transferring to frames. Hick's Hardy White Cos and Bath Cos Sugarloaf are excellent, with Neapolitan and All the Year Round of Cabbage varieties. The main crop of Endive should be sown without delay—Round-leaved Batavian and Green-curled. A first sowing of early Cabbage should be made. Carter's Heartwell, Hill's Incomparable, Wheeler's Imperial, and Wheeler's Cocoa Nut are admirable; Veitch's Atkins' Matchless and Little Pixie being small take up little room, and are of excellent quality. A last sowing of Peas may be made, but it must be of the early varieties and in a warm situation. If a sowing of French Beans be made in a warm position where the plants can be protected in autumn with glass, a late supply will be insured. Make a good sowing of Turnips for autumn use. Plant out Broccoli as the ground becomes cleared of Peas and early Potatoes, but if there is not ground available for planting Broccoli, &c., until those crops are off, prick-out the plants rather thickly in beds, and transplant them as soon as the ground is available. Where kitchen gardens have been long established and highly cultivated the soil becomes very

rich, which is certain to promote a rapid growth that renders the plants unsuited to withstand a severe winter. In such soil it is well to plant without digging the ground so as to induce sturdy growth. Plant out the Cauliflowers intended for autumn use and for lifting. Tomatoes on walls or trained to stakes should be well attended to in stopping all lateral growths, and when a sufficiency of fruit is set stop the leading shoots so as to direct all the energies of the plants to the maturation of the fruit. Vegetable Marrows as they begin to lengthen should have the handlights removed, and the stems pegged down to prevent their being blown about by wind. Look well over Gherkin and ridge Cucumbers, removing the handlights after the plants are growing freely, thinning and stopping the growths as required, securing them by pegging.

#### HARDY FRUIT GARDEN.

Fruit trees generally are making an unusual amount of wood, which must be stopped in good time so as not to unduly exhaust the energies of the trees, and so prevent by the exclusion of light and air the formation of flower buds for next season. The thinning of Apricots should be brought to a close as speedily as possible, and the growths restrained by pinching the forerights at the second or third leaf, removing superfluous growths altogether and laying in as much young wood as space will allow, having the spurs close to the wall so as to afford them the benefit of its warmth in furthering the ripening of the wood and in protecting the blossom. Clear away the blistered leaves of Peaches and Nectarines, as with the warmer weather clean foliage is being produced, and should have every encouragement in the shape of syringing in the evening of bright days. If there be the least trace of aphid, red spider, or other insects promptly apply an insecticide, such as soft soap, 3 ozs. to the gallon of rain water, with a pint of tobacco juice added to each gallon, which will destroy most insects to which fruit trees are prone. For mildew apply sulphur. The nailing and tying-in of the growths of wall trees must be systematically attended to, as when neglected they are liable to be damaged by wind. Vines trained to walls should receive their final disbudding, retaining only the shoots of which the foliage can be fully exposed to light and air, securing the growths close to the wall, in order to afford them all the warmth possible.

Figs on the open walls should have attention in thinning the shoots, which must be kept moderately thin, as with the foliage much crowded the wood does not ripen perfectly. The shoots should be stopped at about the sixth leaf unless the growth be moderate, when it may be trained in without stopping, as also the leading shoots, the finest fruit being produced by the extension system. The shoots should be secured to the wall. Ground intended to be planted with Strawberries should be well manured and trenched, though in case of shallow soils it is not advisable to bring up the bad soil, but it should be loosened, and if a good dressing of manure be placed there it will assist the plants in withstanding drought. Plants should be prepared by layering in small pots, selecting runners from fruitful plants, and when they are well rooted plant without delay. Vicomtesse Hericart de Thury, President, Lucas, James Veitch, Dr. Hogg, and Unser Fritz are good varieties. On light soils Sir Harry, Sir Joseph Paxton, and President do capitally. If the late-forced Strawberry plants be put out, the soil well firmed about the ball, and a good watering given, they will afford an abundant crop next season. Newly grafted trees should have the ligatures loosened. A stick thrust into the ground and the graft secured thereto will make it safe from the wind in the matter of dwarfs, but standards that have been headed back should have a stick tied to each arm and pointed in the direction of the graft, to which the latter may be secured as it grows. Budding may now or shortly be followed up with fruit trees generally, and may be practised on wood of several years old as well as on younger, providing the wood is not hard or rough from age. In the case of trees too old for working it is better to head them down early in spring and bud upon the young wood when sufficiently matured in summer.

#### FRUIT HOUSES.

Melons.—It is important that the late plants be planted out without delay, especially where the means of affording artificial heat is confined to fermenting materials. Whether grown in pits or frames a sufficiency of fermenting materials should be used to raise a bottom heat of about 90° so as to start the plants quickly. In houses as the crops are cleared, the plants if exhausted should be removed, and preparations made for a fresh start at the earliest opportunity; but if the plants are in good health it is sheer folly to root them out, as they will come into bearing again much sooner than young plants, and are in every way more tractable; indeed if the plants are not overcropped, do not suffer for water at the roots, and the foliage is kept healthful, they will continue bearing as late as is desirable. When the crop is cut the plants should be divested of most of the old or damaged leaves, fresh growths being encouraged in the place of any exhausted, which should be cut away. The surface of the bed should be loosened and the loose surface soil removed, applying a couple of inches of fresh loam, giving a good watering, and when growth is taking place afford a good application of liquid manure, and then treat as for former crops. When Melons are grown upon the

continuous system it is well to note that the laterals will grow somewhat freely and show fruit abundantly after a few joints of growth. The flowers after being impregnated will set and the fruits will swell freely, so that sufficient moisture only need be accorded to maintain the plants in continuous bearing. Attend to stopping, thinning, tying, or otherwise regulating the shoots, not allowing pressure of work in other departments to interfere with this, or the results will be so detrimental as to be difficult of remedy. Successional plants should be earthed up as soon as the roots show at the sides of the hillocks, making the soil firm, being careful that the plants do not suffer by want of water, and on the other hand are not too wet. To plants swelling off the fruit supply liquid manure, but weak. Maintain a bottom heat of 80° to 85° for young plants, 90° with a moist atmosphere to growing crops, syringing freely excepting when the fruit is setting or ripening, being careful not to allow one or two fruit to take the lead, but have them all as nearly as possible of one size on a plant.

#### PLANT HOUSES.

**Ferns.**—Plants that did not require more root space at the general potting in the early spring will now need it as well as any small plants that had a shift in spring. Shift all plants therefore that require it, making sure that the water can pass away freely, for though moisture-loving plants they are impatient of stagnant water; therefore the drainage must be thorough, and for any that have delicate roots a few pieces of pot or charcoal mixed with the compost will be an advantage. Good fibrous peat answers well for most Ferns, but fibrous loam is by some preferred for *Adiantums*, *Pterises*, &c., grown for cutting. *Gleichenias* should never be allowed to have their creeping rhizomes injured through want of room. There must never be any lack of water, as when the young fronds flag they never again recover so as to attain their proper size. *Gleichenias* require particular care in this respect, also Tree Ferns, especially *Cyatheas*, *Alsophilas*, &c., as if ever they become dry at the roots when making fresh growth disfigurement is sure to follow in both form and colour. Afford no more shade than is necessary to prevent scorching, and ventilate moderately, as anything approaching to a close confined atmosphere is sure to result in attenuated growth. Keep insects well in check, especially scale, as if once it obtains a hold it is difficult to keep the plants clean. Thrips may be subdued by fumigation with tobacco, but it must always be done with care, as the effect of an overdose will be objectionably apparent until fresh growth is made.

Pot Roses for flowering in winter and spring must have every attention paid to them, encouraging them to make all the growth possible. The plants should be plunged in ashes in the full sun, and not too close, mulching the surface of the pots with some rich material, as rotten dung, watering twice a week with liquid manure, never allowing them to get too dry. Aphides and red spider must be kept under by syringing if necessary with a solution of soft soap, 8 ozs. to the gallon of water with a pint of tobacco juice added, and if mildew appear dust with sulphur.

**Orchids.**—This is a good time to pot *Cattleya Mossiae* and *Lælia purpurata*, as they will be starting into fresh growth, being careful not to injure the eyes. If the potting of East Indian plants is completed the surface of the soil may be covered with fresh sphagnum or be planted with some small-growing *Selaginella*. The *Anacochilus* when growing and in good health should have plenty of water; those grown under bell-glasses should have a crock placed so as to keep the glass tilted to admit air, for if that be not attended to the plants will decay. It is a good plan to remove the glass for an hour or two every morning. Plants having completed their growth for the season may be removed to a cooler house with an average temperature of 60° without sun heat. *Dendrobium nobile* and many others of the genus frequently make a second growth if kept in their growing quarters, which may be obviated by placing them in a house with less heat and moisture, at the same time affording them more air. *Cattleyas* when growing require plenty of moisture to enable them to make plump pseudobulbs. Supply *Calanthes* with weak liquid manure, and sponge the leaves frequently to keep them free from thrips, red spider, and scale. *Sobralias* also require frequent sponging, and the syringe must be plied freely to keep red spider down. *Thunia Bensoniae* and *T. alba* flower at this season, and are valuable, requiring similar treatment to *Calanthes*. Ventilate the houses about seven o'clock in the morning and close them about four o'clock; syringing all blocks and plants overhead, especially after a hot day. Many *Odontoglossums* and *Masdevallias* will now require a shift, especially those which are growing strongly and have filled their pots with roots. Supply plenty of water to the roots of those growing freely, using the syringe frequently, and employing every available means to keep the *Odontoglossum* house cool by sprinkling plenty of water about the floors and ventilating freely, the bottom ventilators being left open all night.

All winter-flowering plants will do better in pits than in large houses, where they are generally spoiled through being kept at too great a distance from the glass and not having sufficient light and air to make a strong growth, for as a rule the more sturdy plants are the more satisfactory will be their flowering. Keep all plants clean. Thrips are best subdued by repeated

fumigation, and for scale there is no safer remedy than picking off the insects whilst young and sponging such plants as will bear it with soapy solutions. We find nicotine soap at the rate of 3 ozs. to the gallon very effectual against scale and mealy bug, it being syringed on the plants or applied with brush or sponge; it does not appear to injure the most tender foliage, and unlike many other insecticides has a pleasant camphoric odour. It is equally effectual against red spider, thrips and aphids. Look over roof climbers frequently, thinning out the growths where necessary, and otherwise tying and regulating so as to keep them within reasonable limits, and at the same time further their flowering by admitting air and light to them as well as to the plants beneath.

#### TRADE CATALOGUE RECEIVED.

G. Brunning & Sons, St. Kilda Nurseries, Melbourne.—*General Plant Catalogue.*

#### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense. Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

**IRISES IN POTS** (*Irish Subscriber*).—The plan you propose of potting the bulbs or tubers and plunging the pots quite over the rims in a border, and allowing them to remain there until the flower spikes are visible, then removing the plants to the greenhouse, would no doubt answer and produce beautiful flowers under glass. It would not be advisable to place the plants in the greenhouse immediately the growth appears in the spring, as they would, unless in a very light and airy position, become drawn, and would not flower satisfactorily. A better plan would be to place a low frame over them in the border, or simply to affix some boards on edge, and place some frame lights across the plants for affording protection in spring and to accelerate their blooming. When thus prepared the plants must have abundance of water, light, and ventilation during the period of active growth. When Irises are established in the open ground and the soil is suitable and tolerably well drained it is not necessary to take them up annually. You can probably obtain the other information you require by writing to Mr. J. S. Ware, Hale Farm Nurseries, Tottenham.

**SILENE PENDULA** (*Amateur*).—This and its variety compacta should be sown in drills a foot apart in July, the plants being afterwards thinned to 6 or 9 inches apart; they then become of good size and hardy, and flower early in the following spring. The flower you have sent is *Limnanthes Douglasii*, the seed of which should be sown in August and the plants treated similarly to the *Silenes*. Both these annuals are quite hardy, requiring no protection during the winter, provided the seedlings have been timely thinned, so that they assume a sturdy habit. The Conifer you have sent is *Thuja aurea*.

**WINTERING ALTERNANTHERAS** (*C. T. H.*).—We find no plan better than taking up a few plants in the autumn before they are touched by the frost (which is very important) and potting them in 5 and 6-inch pots, using a compost of half loam and half leaf soil, wintering the plants near the glass in a pit having a minimum temperature of 50°. A dozen or two of good plants thus preserved (and we rarely lose any) give thousands of cuttings in the spring. If, however, you have tried that plan and failed you may pot some very small plants now, and establish them in 4 and 5-inch pots, and if these plants have a slight shift in the spring they will yield a profusion of cuttings for propagation. The plants may be grown in a cold frame, or be plunged in ashes outdoors during the summer, watering them copiously when the pots are filled with roots. *Alternantheras* are often lost in winter by attempts to preserve them in cold greenhouses. The species employed in carpet bedding are stove plants, being natives of Brazil, and must be treated accordingly.

**GLAZING A VINERY** (*R. G. M.*).—We have had no experience with the system you name. Write to the patentee and ask him to supply you with the addresses of those who have adopted the mode in question, and from whom you can obtain reliable information. We know that bedding the squares well and firmly in putty, using no top putty, answers well, the squares being made safe and firm with small copper brads or "sprigs," such as are often used by bootmakers. When no top putty is used it is not necessary to "rabbet" the sashbars so deeply as usual. We think the mode of glazing to which you allude is good, and you will do well to obtain information respecting it from those who have actually tried the plan before you erect your large house.

**LYCOPODIUMS** (*J. T. S.*).—From your remarks we think that the plant is a *Selaginella*, and not a *Lycopodium*; if such be the case it is probably *S. Kraussiana*, which is the commonest of the species, and often wrongly named *S. denticulata* or *S. hortensis*. The *S. Kraussiana* already mentioned is a native of South Europe, and consequently succeeds in a medium temperature, although it will endure much cold if protected from an undue degree of moisture at the same time. During spring and summer a greenhouse, or in fact any structure, is well adapted to its requirements, and it may be planted as an edging to paths or under stages in houses, or if grown in pots it forms a pretty edging for long shelves of plants. The soil should consist of fibrous peat, sand, and loam, good drainage and abundance of water during warm or dry weather being essential to its success. It may be readily increased by dibbling into pots, pans, or borders pieces of the branches, the smallest portion of which will root and rapidly increase in size. We may observe that one point of distinction between *Lycopodiums* and *Selaginellas* is that the latter have two different forms of leaves, one being smaller than



the other. Assuming your plants to be *S. Kraussiana*, if you insert cuttings or sprays now in small pots and keep them close and moist in a shaded frame until they are in active growth, then admit more air, you will have healthy tufts in a few months, which will winter much better than older plants.

**LIQUID MANURES** (*John Elliott*).—Soot may be used for the purpose you name, but powdered charcoal is much better and more effectual if added at the rate of two or three handfuls to a gallon of urine. The urine must be diluted with five or six times its volume of water. One ounce of superphosphate of lime may be safely mixed with a gallon of water if intended to be employed for general garden crops out of doors, but for plants in pots not more than half an ounce should be used per gallon of clear water. In stimulating plants with liquid manure make it a rule to supply it weak but frequently, as if a plant is deluged with powerful manurial applications it is generally injured more than it is benefited.

**STRAWBERRIES FOR FORCING** (*Amateur, Taunton*).—Of the varieties you name Black Prince is the earliest, Comte de Paris next, Dr. Hogg being only reliable for late forcing. Perhaps the most useful of all Strawberries for forcing is Vicomtesse Héricart de Thury (Garibaldi). La Grosse Sucrée, Keen's Seedling, and President are all excellent varieties for forcing. Were we limited to two varieties we should choose the first and last varieties we have named.

**PRIMULA CORTUSOIDES AMENA** (*Idem*).—The plants are very liable to lose their foliage when kept in the greenhouse after they have ceased flowering. They are much better placed in a cold frame in a rather shaded position, the pots being plunged in ashes; but a better plan than that even, and simpler, is to plant them out in good soil in a partially shaded border, potting them again in the autumn. In well-drained positions the plants are quite hardy. We saw some fine clumps flowering this spring on the rockery at Chiswick, the plants having had no protection during the winter. *Cyclamen europæum* flowers in late summer or early autumn, *C. coum* in early spring.

**FICUS ELASTICA UNHEALTHY** (*N.*).—If the plant did not receive injury by the severity of last winter it has been either too dry or too wet at the roots. Turn it out of the pot, and if the roots are not healthy and active remove a portion of the old soil and replot the plant in a clean well-drained pot, keeping it partially shaded for a time, and sponging the leaves frequently with tepid water. The flower you have sent is of *Polemonium caeruleum*.

**SEEDLING PANSIES** (*L. J. K.*).—The varieties are showy and suitable for border decoration, but none of them possess the properties required by florists in flowers for exhibition purposes. No. 6 is pretty, and may improve in substance when propagated from cuttings.

**CABBAGE PLANTS INJURED** (*Delta*).—It is impossible for anyone to determine the cause of the injury of which you complain from the small scraps of roots sent. The plants appear to have been kept too long crowded together in the seed bed until their stems became woody, and then did not make fresh roots freely after having been planted, possibly owing to an extremely cold and wet state of the soil.

**ONIONS FAILING** (*Dan*).—Many beds of Onions were much injured this spring by the dry easterly winds that blew so fiercely as soon as the plants appeared above ground, and the plants thus crippled being overtaken by drenching rains were unable to grow with any freedom. Assuming the soil to be suitable we can only suggest that the failure of your Onions is due to the extraordinary weather that has been experienced this year. Such plants as you have sent are beyond recovery.

**CARROTS DYING** (*H. Playdon*).—They are attacked by the Carrot maggot, and are incurable. Your other bed will probably share the same fate even if you give it a good dressing of soot, which is about the only remedy you can try with safety. You need not, however, be without Carrots in the winter, for if you sow seed of Early Horn at once the plants will have time to form good-sized roots, and in all probability will escape the attacks of the destructive pest.

**APPLE TREE LEAVES SCORCHED** (*J. Burgess*).—The leaves appear to have been scorched by lightning, though it might be the result of deleterious fumes coming in contact with them; but that would have affected the young wood equally with the foliage, which is not the case in this instance.

**HEATING SMALL GREENHOUSE** (*Spero*).—We do not think a paraffin lamp would answer your purpose, as it would require one of considerable power to exclude frost, and would consequently be expensive. A slow-combustion boiler with hot-water pipes would be more suitable having two rows of pipes—that is, a flow and return along the front of the house, the boiler being fixed inside the house. With care in attending to the fire there would be no danger of injuring the plants from the escape of smoke. We cannot recommend dealers, but you may obtain particulars of price, &c., by applying to those advertising in our columns, stating what you require.

**VINES UNHEALTHY** (*J. S. S.*).—The leaf sent shows signs of indifferent support, the roots not being in an active state, which may have been occasioned by overwatering. It is unreasonable to apply water in the quantity you name without any regard to the condition of the soil at the time. We should say the heavy waterings have made the soil sodden, and many of the roots have perished. One-third the quantity of water would be ample, provided the roots were active. We should mulch the surface of the boxes with some short manure, and apply liquid manure at every alternate watering, allowing the laterals to extend so as to promote root-action. The white spots on the Peaches and Nectarines are probably caused by mildew, which should be rubbed with flowers of sulphur, also dusting the leaves freely with the sulphur.

**WISTARIA TREATMENT** (*J. Sargent*).—The long growths should be trained about a foot distance apart where there is space, and those not required for that purpose should be pinched or cut back to two or three joints, so as to form short stubby shoots or spurs.

**ROSES NOT FLOWERING** (*A. B. C.*).—The plants have not had the wood well ripened. Shorten back the long shoots to about half their length, so that when they break again the eyes at the base of the shoots will not start into growth, and plunge the plants in ashes outdoors in a sheltered sunny situation, allow each plant plenty of room, and water with liquid manure occasionally. They may afford a few flowers in autumn, being more likely to do so outdoors than if retained under glass. The leaves sent have been infested with caterpillars, which should be sought for and destroyed. Do not mix the tank manure with guano, but apply them separately, preference being given to the latter.

**PEAS FAILING** (*G. L.*).—The soil has become exhausted from continued cropping and manuring solely with organic substances. Though the sub-soil is chalky we should not hesitate to apply a dressing of lime at the rate of a hundred bushels per acre during dry weather in late summer or autumn before digging the ground, or in March before putting in the crops. Do not dig any manure into the soil for a time, but mulch the surface instead with short manure, and in dry weather water copiously. It would be a permanent improvement to the soil to give it a good dressing of fresh loam, the top spit of a pasture taken off with its turf, mixing it with the old soil in the process of digging or trenching, and if it were of a clayey or tenacious character it would enable the crops to withstand drought better.

**PROLIFEROUS DAISY** (*A. C.*).—It is a well-known variety of *Bellis perennis*, and is popularly known as the Hen-and-Chickens Daisy.

**DESTROYING AMERICAN BLIGHT** (*J. H. C.*).—Your Apple trees appear by your description of them to be attacked by the above destructive insect (*Aphis lanigera*). You may destroy the pest with paraffin or methylated spirit, applying either with a small brush to the woolly clusters, but not to the smooth bark of the trees.

**THRIPS AND SCALE ON PLANTS** (*E. H. C.*).—Your plants have been infested by the above insects, and the leaves are now encrusted with dirt and impurities. It is impossible that the plants can flourish when in such a state, and almost impossible to clean them without sponging the leaves with soapy water. If you syringe them frequently with soft soap water, 1 or 2 ozs. to the gallon, at a temperature of 100°, you will clean them to some extent, but any leaf you can reach should be sponged. We should place all the plants that are moveable out of doors, and the rains will benefit them considerably.

**NAMES OF PLANTS** (*E. S. W.*).—We do not undertake the naming of varieties of florists' flowers; they are far too numerous, and many of them so much alike that they can only be correctly named by comparing them with others in a large collection; besides, the truss of *Zonal Pelargonium* which you simply enclosed in a letter was, as are many other flowers sent in the same manner, so much crushed and flattened as to be totally beyond identification. (*A Young Botanist*).—1, *Gymnadenia conopsea*; 2 and 3, *Orchis maculata*; 4, *O. Morio*; 5, *O. ustulata*. (*A Young Gardener*).—1, a *Verbascum*, but the flowers were too withered for identification; 2, *Chrysanthemum frutescens*; 3, *Begonia parviflora*. The red-leaved *Begonia* is probably *B. ferruginea*. The specimen with variegated leaves is *Coprosma Baueriana variegata*. (*T. W.*).—1, *Adiantum pubescens*; 2 and 5 appear to be *A. Capillus-Veneris*; 3, *Gymnogramma chrysophylla*; 4, *Pteris serrulata*; 6, *Adiantum cuneatum*; 7, *Pteris serrulata cristata*; 8, The frond was very young, but it resembled *Adiantum anabile*. (*Pen and Ink*).—*Armeria vulgaris* (Thrift). (*E. C.*).—6, *Crataegus Pyracantha*; 7, *Rhododendron ferrugineum*; 8, *Wegelia rosea*; 9, *Deutzia scabra*; 10, *Taxus baccata*; 11, *Cryptomeria japonica*.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### SUBURBAN VILLA FARMING.

(Continued from page 17.)

WHEN the best butter-making cows, such as we have been alluding to, bring their calves, the calves should not be retained longer than three days, but then be sold for what they will fetch. When they fall the cow should be milked nearly dry before allowing the calf to suck, and this should be continued until they are sold. The first day's milk may be given to pigs, and afterwards until the milk comes pure and fit for making perfect butter. The calves cannot be retained with advantage, as these breeds never pay for making into veal, the only exception being when the owner desires to keep a calf and wean it from a favourite cow. It may then be weaned and never suck the cow at all, but be taught to drink and receive new milk for a week, and then gradually be reduced down to skim milk only, until it begins to eat. Before noticing the mode of feeding we recommend it should be arranged so that all the stock on the farm should have free access to lumps of rock salt at all times. In ordinary seasons spring feeding may be commenced about the first week in April, as most grass land will furnish food at that time more or less; and we approve of feeding the grass early, so as to keep it short and closely fed during spring and summer also. Although we have ample supplies of food for cows, the produce of the arable land, to supplement the pasture grass from this time, yet an allowance for each cow of from 2 to 4 lbs. of bean or maize or cake meal per day may be added with profit.

The first cutting of Italian rye grass will be ready at this time if the best foreign seed has been sown and well manured with nitrate of soda or liquid manure, and the second cutting will probably be ready the second or third week in June. In the interval between the first and second cutting trifolium will be ready, and if both early and late sorts are grown it will continue fit for soiling until the middle of July as supplementary food. In order that there may be no deficiency, mangold should be held

over the produce of the previous year for summer feeding and until the autumn, when the root crops, such as cabbage, kohlrabi, Thousand-headed kale, tall rape or coleseed, will be ready. We must, however, allude to a capital food for dairy cows grown by some parties in the south of England—viz., gourds, pumpkins, American squashes, and the largest sorts of vegetable marrows. We have known these grown to some considerable extent, so that the cows may have them drawn in cartloads on to the pastures, and we understand that when eating these fruits the cows make the most perfect butter, quite equal to grass, and far better than can be made from mangolds, carrots, parsnips, or cabbages. It is said that upon analysis made by Dr. Voelcker he reported that it was calculated to produce butter of fine quality. These fruit will last during August, September, and October if cultivated for the purpose, as they sometimes are, between and amongst mangolds.

After October root-feeding will commence in earnest, beginning with cabbages, then kohlrabi, carrots, and parsnips, reserving and storing mangolds to make good any break or deficiency in the food during the following summer. When root-feeding is commenced 6 or 8 lbs. of well-made park or upland pasture hay should be given twice a day, this when well made having an agreeable aroma arising from the sweet-scented vernal grass (*Anthoxanthum odoratum*) which it usually contains. Some of the before-named roots or vegetable food may be given twice a day, about 25 or 30 lbs. at each bait, passed through the cutter and mixed with meal at the rate of 2 or 3 lbs. each bait of beans, maize, barley, oats, or decorticated cotton cake, meal, or the bran of wheat. These are valuable adjuncts when strewed over and mixed with the cut or pulped roots, as it is better for the cows and attended with less waste than when the foods are given separately, although the above must be considered liberal feeding. Our plan is to put some clean sweet straw, either of wheat or oats, in the racks at night, and whatever portion may be left in the morning is used for littering the pens. When, however, the cows are dry and in calf the above food is too good for them, and we recommend that they should receive their food minus the meal or cake to prevent their making fat internally, the disadvantage of which we have previously alluded to.

We will now allude to the horses which we have stated as probably required, and will suppose to be two nag horses and one farm horse, the provision for them commencing in the spring with an allowance of green fodder, the same sort as provided for the cows. Some gentlemen, however, prefer that the riding and driving horses should have one hundred pounds of hay per week, or hay mixed with a portion of green fodder, in addition to the usual allowance of corn and pulse, which may be defined as being one bushel of oats and half a bushel of beans per week. This idea will not apply to the working farm horse, which will of course receive green fodder *ad libitum* as long as it lasts, with one and a half bushel of oats and half a bushel of beans. When the green fodder fails a plan of feeding to be continued during the winter should be adopted. One hundred pounds of pasture hay in chaff, with one and a half bushel of bruised oats, and half a bushel of cracked beans, and half a hundredweight of Belgian carrots per week, will be found sufficient for horses for fast work. For a farm horse in full work two bushels of oats, half a bushel of beans, one hundredweight of hay, and one hundredweight of carrots per week will be none too much, always being careful to give horses only a moderate quantity of pure water, and never allow them to drink at a pond or trough, because in that case the quantity cannot be regulated, which is most important in preserving them in health and sound working condition.

Some pigs must be considered a necessary portion of the live stock, not only for furnishing pork, bacon, &c., for family consumption, but for the purpose of consuming milk, vegetables, and refuse from the farm and garden. It then becomes a question whether it is best to buy-in a certain number of young animals at about twelve weeks old or to keep a breeding sow. We incline to the former, as being less trouble and capable of furnishing all the meat required. The only exception that we can take to the purchase of young pigs is that at present in some districts typhoid fever exists, and in our purchases we cannot be sure of avoiding the malady, which is not only very infectious but very fatal. The number of young pigs bought should be somewhat in accordance with the food available from the produce of the farm and gardens; it is well at any rate to have pigs of two ages, and of two different stages in feeding or fatness, as meat will then be nearly always ready when required. Young fat pigs called quarter pork will be wanted as well as pigs of larger size for bacon; it should therefore be considered what breed of pigs will be the most suitable under such circumstances. We know no breed so well adapted to furnish the best meat at an early age as the Berkshire. From other breeds we may obtain early maturity or fatness of the meat, yet it is desirable for family use at various weights and ages that the pigs should yield the largest portion of lean meat as well as fat at a given age. In fact some of our celebrated breeds of pigs if killed at the weight of 70 or 80 lbs. would yield but very little lean consumable meat. No doubt but the mode of feeding would have an effect in producing an excess of either

fat or lean. In considering this matter it must be remembered that one of the objects of keeping pigs at all is the consumption of inferior vegetable food, both from the field and the garden, and wash from the villa, and that will be sufficient to keep the animals in a lean and growing state. But to keep them not only healthy and make them fat enough to kill for pork resort must be had in the first place to beans or peas cracked to form lean meat, and next to the fattening with meal. The latter can be done best, having regard to economy in feeding and production of meat, by feeding with the meal of beans, peas, maize, and barley in equal quantities, wet up with milk. The quantity of food to be given in the twenty-four hours we cannot attempt to define, we having a rule to recommend which never fails to produce the best results—viz., to regulate the quantity so that when the animals have done feeding and leave the trough no food should be left therein. Feed only twice a day with regularity, as this will give the animals time to sleep and digest their food.

In villa farming there are a variety of ideas and fancies to be satisfied. In some cases we find a goat is approved; if so, it should be the large variety, which are not only more docile but will give a larger quantity of milk. It should be tethered, as this kind of stock are often mischievous in various ways, especially the smaller kinds. It is sometimes, too, that a pet lamb or sheep is kept; they are generally very quiet and harmless, and will feed without difficulty or attention with the cows, and may live in the same way and in their company. Poultry will always be required: the choice of sorts and kinds will of course vary with the tastes and wishes of the proprietor, and their management has been so often and so well treated of in these columns that we shall not further allude to it at present. The arrangement of the buildings, &c., at the farmery will have our attention in the next and concluding article.

(To be continued.)

#### WORK ON THE HOME FARM.

*Horse Labour.*—This has been so much delayed through the month of June that much work peculiar to that month has been put off entirely on account of the weather having been adverse to the cultivation, cleaning, and preparing the land as usual for root crops. Various crops requiring seed and tillage to be done in a practical manner will now be pressing, and the horse power will be taxed to get the land fit for the seed of turnips, &c. This is, however, about the best time to put in the seed for the main crop of turnips to stand the winter to be fed off by sheep stock until the Swedes are ripe at the usual time, January and February. The best roots that we know of amongst the great variety of turnips which are offered by the seedsmen are the Grey Stone and the Purple Top Mammoth varieties, and they are nearly allied in their feeding qualities, their capability of withstanding the changes of climate, &c., and their adaptability for growth upon the various soils, and for both early or late sowing. They are therefore admirably suited for sowing after green fodder crops or as stubble turnips. The harvest, however, will this year be so very late that the prospect for a full produce of turnips after a cereal crop is not at all encouraging. The drilling of the seed may be done to the best advantage daily between the shocks of corn as fast as it is cut and set up. When the horses are hindered by the weather the fallows intended for wheat may receive another ploughing in order to keep down the growth of weeds, &c., for fallow ploughing may be done at a time when the land is too damp for the ordinary preparations at seed time for turnips, &c. We can recommend the seeding of tall rape or coleseed at this time either for feeding off by sheep or for cutting up for soiling dairy cows. This food is the very best of all for the production of milk in large quantities and of butter of the finest quality. We say tall rape, because the dwarf rape cannot be used for the same purpose with the like advantage, the difference being that the tall rape when sown thick will continue to grow up in long succulent stems, but the dwarf will die away and leave a large number of short naked stems of a wiry character. Unless the crop is taken in time by feeding or cutting it will not keep and retain its produce and quality, for in the course of a week or two if not used the leaves turn purple, then yellow, and fall, leaving only a small green heart at the top of the stem about the size of a primrose.

*Hand Labour* is for the most part superseded by the machine for the mowing of grass crops, except in the case of water meadows, where the deep and numerous water carriers and drawing trenches offer a serious impediment to cutting grass with the mowing machine. Therefore these meadows afford nearly the only opportunity for hand labour in mowing with the scythe. The hoeing of mangolds, carrots, Swedish, and common turnips will now be going on, and in such a season of showery weather as we have passed through, should it continue the weeds must be cut up by hand-hoeing, even if the land is too damp for them to die off. There is, however, the greater necessity in such cases to hoe the weeds in their infancy, many of which would then die off; but when they are left to get strong before hoeing, they not only live but compete with the crop and dispute the possession of the soil, and at the same time feeding upon the manures placed in the soil for the benefit of our vegetable productions. In a season like the

present there is a great advantage where the root seeds have been put in upon the stretch, because in that case the horse-hoeing may take place and be done effectually at any period during the growth of young plants, without any probability of burying or injuring them, as is often the case when the seed is drilled upon the flat, more particularly when the weather is adverse.

Buying in the stock of Hampshire, Dorset, and Sussex Down sheep will now be going on, and large numbers of lambs are now being purchased to go into the midland and other counties, at the early fairs in Hants, Wilts, Dorset, and Sussex: the principal being Stockbridge, Overton, Alresford, and Weyhill in Hants, Britford and Wilton near Salisbury in Wilts, Dorchester in Dorset, and Lewes, with some others in Sussex. The practice of shearing the lambs bought at these early fairs, especially those from Overton, Alresford, Britford, and Lewes, is to be recommended, for although wool is now at a comparatively low price, yet the advantage will be found in the well doing of the sheep during the autumn and winter months. This applies with much greater force to the crossbred sheep than to the pure breeds of either Hants, Dorset, Wilts, or Sussex; for we know during several years past when wool was dearer that the clip of wool from those crossbred between the Down and Cotswold had made from 7s. to 9s. per head when taken in the month of August and sold in the grease. We have further noticed that these animals when sold in the market as mutton have made long prices, and at the same time have yielded when killed heavier weights for the food consumed than they would have done if they had been kept and sold in their teg fleeces.

### KERRY CATTLE AT KILBURN.

THERE were no less than twenty-nine entries of Kerry cattle at the International Show of the Royal Agricultural Society at Kilburn, and this afforded an excellent opportunity for those who are interested in the extension and improvement of this valuable breed to form an opinion of their merits. An extensive breeder from the sister isle expressed his opinion that there never was a better lot of Kerrys brought together. The great attraction was the noted bull "Busaco," the property of Mr. Robertson of La Mancha near Dublin. For several years he has been the premier bull of Ireland in the Kerry class, and though now over six years old he is still a handsome animal. To him the first prize of £20 was awarded. The next best, and which took the second prize of £10, was "Punch," a grandson of Busaco, bred and exhibited by Dr. Hogg of Streame, Horeham Road, Sussex. This little fellow was only a year and four months old, and was a great attraction in the yard on account of his perfect symmetry and smallness of stature. The third prize was awarded to Lord Clonmell's "Kerry Recruit," bred by Sir Gerald Aylmer, Bart., Donadea, Kildare; an excellent animal, but as his place in the awards indicates, not up to the standard of those already mentioned.

In the class for cows Lord Clonmell of Bishop's Court, Kildare, took the first prize with his "Pride of Kerry," a handsome six-year-old in full milk. Mr. Richard Good of Aberton, Cork, was second with "Norah," and Mr. Peter Hay of Spike Island, Queens-town, was third with "Little Beauty." Mr. Robertson's "Perilla" was highly commended; while Dr. Hogg's "Kitty," Mr. Good's "Molly," and Sir Richard Wallace's "Buttercup" received commendation. It is worthy of remark that the second prize for the best butter in the Show, the produce of the United Kingdom, was awarded to Mr. Verschoye of Ross, Herefordshire, for butter made from the milk of Kerry Cows.

### FARMING BY RAILWAY.

A GREAT amount of farming has recently been done in railway trains, for thousands of people passing to and from the late great Agricultural Exhibition at Kilburn have discussed the condition of the crops and the prospects of the approaching harvest. My journey was outwards from London—route the Midland Railway; destination Leeds. As the subject of agriculture pertains immediately to the Journal, and a vast number are interested in the appearance of the crops at this juncture, the publication of my railway notes will not be inopportune. A Midland express may not afford the best possible facilities for surveying the crops, or at least the inspection of them is necessarily a fleetly one and judgment must be prompt; yet I found a pleasant compensation, for if my journey was swift it was sufficiently smooth to permit of writing with a considerable amount of comfort, and I have only to tear a few leaves from my notebook containing my impressions and send them to the printers. I may, however, first place on record two incidents—one at each end of my journey—of a somewhat remarkable character, and of a kind to account in a great measure for the unsatisfactory appearance of the crops. My journey began in a hailstorm and ended in a frost, for on leaving St. Pancras hail fell thick and fast, and early the next morning at Leeds the roofs of some large marquees were covered with a film of ice. This during the last week in June is conclusive evidence of the extreme insalubrity of the season. And now for my notes.

On emerging from the metropolitan precincts the first glimpse

of the country is a beautiful one. The landscape is undulated, wooded, bold, and fine, the district being literally strewn with flowers, the embankment being white with oxeye daisies, and the meadows beyond bright with buttercups; grass full but short, and if the long-expected summer arrives the hay harvest will be tolerably good. A corn field here and there presents a miserable appearance; barley being yellow, and yellower with charlocks; wheat short and poor, especially in the hollows; potatoes weak and late. Onwards towards Luton the prospect is no better—grass worse, corn weak, and covered with charlocks like a cloth of gold; fallows a mass of weeds, turnips not sown, clover full—this and the weed crop alone looking well; a field or two of seeds cut, lying in swathe flat, black, and wet—a dismal look-out. Rushing northwards we arrive at a district of larger fields, fewer trees, and smaller hedges; but although a better system of farming appears to prevail, yet the result so far is very disappointing. Barley yellow, only a tinge of green in the ridges; wheat not much better; fallows a mass of weeds; only a few acres of turnips sown; clover cut, black, and wet. Before reaching Bedford land, crops, and culture better; a few fields of wheat looking well and clean. The district passed through smitten with yellow fever—charlocks or wild mustard; but now more fresh, green, and healthy. Still northwards, grazing and arable land alternating; water standing in hollows, yet crops moderately good; grass green, but stock not over sleek. Onwards through a great grazing district; pastures fresh and good; sheep and cattle generally looking well. Northwards from Leicester farming better, but corn late and patchy, quite yellow in furrows; wheat better than barley; a few fields promising; beans, healthy but weedy; and some turnips above ground; pastures full, stock good. More nearly approaching Trent crops of all kinds generally better, but not one field of corn in a mile can be described as excellent. North of the Trent hedges white as a sheet with "May." This in July! Land wet and poor; crops ditto. On to Chesterfield the outlook generally very poor; crops, with few exceptions, late and badly coloured. Approaching Sheffield farming ends, and between the smoke-infested district of Sheffield and that of Leeds there can be few if any lucrative crops this year.

From an æsthetic point of view the district passed through is pleasant, in places picturesque, but agriculturally the prospect is decidedly a gloomy one. Not two hundred acres of really superior wheat are visible in two hundred miles, while barley is worse, and only half a dozen fields of turnips and three or four of mangold wurtzel are seen above ground along the whole journey. Weeds and wet, or its effects, predominate. It will be only by a miracle that farmers can make fortunes in the districts traversed; but, on the contrary, it is greatly to be feared that the majority will fail to make "both ends meet" during this extraordinarily trying and inclement season.—J. W.

### POULTRY FARMING.—No. 2.

WE promised not long ago to give a sketch of our ideas as to how far poultry could be profitably produced on a large scale for the markets in this country. Since we made that promise we have been struck by the following observations in a leading article in the *Standard* one day last week. They refer to the great Show at Kilburn, and to its possible effect on the depression of agriculture. "We wonder whether the bee-keeping department will have any effect on English farmers. It still remains to be seen whether the cultivation of eggs, honey, poultry, bacon, *et hoc genus omne*, cannot be made to compensate for the falling-off in other things. Many people think it can, many people think it cannot. The experiment, however, has never been fairly tried in this country, for we cannot argue from the conditions of the last century to those of this." We thoroughly endorse the belief that the experiment has not been fairly tried, and we should be extremely glad to see it so made. We are now only occupied with two of the above-mentioned industries—viz., the production of poultry and eggs, and leave the consideration of the others to those who are more conversant with them than ourselves.

An immense deal of harm has been done by rash writing. To begin with, certain wild enthusiasts, who perhaps deceived themselves and certainly deceived the public, wrote much about the enormous profits which might be made by poultry breeding. Unfortunately some of their pamphlets sounded so attractive, from the promise of easily made gain which they held out, that they found far more purchasers and readers than they deserved. Their conclusions were not based on any real or practical knowledge, and were, of course, found delusive. Those who had been unwise enough to place much confidence in them were naturally disgusted, sold their poultry, often at great loss, tore down their long rows of houses and wire fences, and returned to their original plan of buying shop eggs at 1d. a piece instead of producing them, as they had fondly expected, at 1d. a dozen. Most of the great authorities on the subject promptly flew to the opposite conclusion—viz., that it would be impossible ever to make poultry breeding profitable in this country. There is a great deal to be said for the reasons that they urge against it, such as these: that we have not in England the many small holders of land that

there are in France and Belgium, who can afford to give their attention to such minor departments of the farm; that our climate is a bad one and unsuitable for the production of poultry; that hundreds of birds never have been and never will be kept near together without the periodical occurrence of epidemics, which often carry off half the stock. We cannot but think that though great weight should be given to all these considerations, yet that they are not insurmountable objections to some fresh and fair trial being given on intelligible principles to poultry farming. The present seems for various reasons a peculiarly opportune time for the trial to be made. The first objection—viz., that such an occupation is not suitable to the national system of farming, seems rather to beg the question. Besides, if the master and his men are well employed on the land and with the herds, there seems to us no sort of reason why the mistress should not be employed with Ducks and chickens to a far greater extent than is now common on English farms.

The writer of the leader in the same daily paper goes on to observe, "It is not the exhibitor of prize bulls or prize turnips who feels most acutely the pressure of the present times. Feel it, of course, he does; but not at present in such a shape as to pinch him. It is the small man, who never fed a prize animal in his life, who is really being ruined by the present crisis, and who deserves our sympathies much more than the unsuccessful millionaire, who, as he knew nothing of farming when he entered it, has no right to complain of losses when he leaves it. The farmer is told that events will all come right; that every business has its bad times, and that if he can only hold out prosperity is again in store for him. But in that 'if' lies the whole gist of the matter. Thousands of men may be ruined while the system is righting itself, and we cannot refuse them our sympathy even if we refuse them our convictions." Our idea is that in this terrible crisis for the smaller farmers here described, when the land will scarcely yield sufficient return to pay for its cultivation, and when ruin seems to stare many in the face unless they can tide it over, that it would certainly be worth while to turn serious attention to the production of poultry on a considerable scale. To the objection that our climate is too bad for it we can only say that we do not think so, but we shall by-and-by have something more to say on this point. The difficulty of keeping a large number of birds healthy when in close proximity is a real and very formidable one, and we can but give what seem to us the best means of obviating it.

We have from time to time seen and heard of what by a strange misnomer are called "poultry farms"—viz., long rows of pens or small poultry houses, generally arranged on each side a central covered passage, sometimes with and sometimes without small runs attached to them externally. Such places are very nice and convenient for amateurs, not in lieu of but as supplementary to more extensive ranges. For breeding young Pigeons most of them would be admirable, or for housing exhibition poultry during bad weather, and protecting light-coloured birds from the sun; indeed, most varieties look the better in a show after having spent two or three days on clean straw in such a place, but for keeping fowls as profitable stock, much more so for rearing them, such establishments are worse than useless.

It is not long since we saw an advertisement to the effect that in some such place, covering about 2 acres, from £1500 to £2000 a year might be made by rearing birds for the markets. We venture to be positive that it would be absolutely impossible for anyone to make anything like a tithe of that sum, and anyone who honestly believes in its possibility must be totally ignorant of the whole subject. We shall not be so rash as to hazard any plan for a poultry farm, much less shall we draw out any elaborate calculation as to the profits which might be derived from one. Figures may be made to prove almost anything, and those who have pretended to enter into them have done much harm. Our endeavour is always to be practical and to have opinions on facts alone for which we can personally answer. In the present instance our object is to point out clearly the chief difficulties of keeping a large number of birds congregated together, and to give our ideas as to how and how far these difficulties may be overcome. We can only do so on the analogy of the method by which they can be overcome when birds are kept in much smaller numbers. Such analogies as we have before pointed out only partially hold good. Because fifty fowls may be kept in health on an acre of ground and yield a fair profit, it by no means follows that five hundred will do the same on ten acres. We do believe, however, that many of the difficulties on this score, and the risks too, may be much lessened by the intelligent distribution of stock over suitable ground, and by its systematic management on natural principles. The headings of the subject on which we hope to say something in order are—1, The land, position and climate most suitable for poultry in large numbers; 2, Their distribution and accommodation on it; 3, Their general management, and the breeds most suitable for various requirements.—C.

#### VARIETIES.

On the occasion of the visit of the Irish farmers to Marlborough House last week, headed by the Rev. Canon Bagot and Mr. James

Robertson of Dublin, His Royal Highness the Prince of Wales caused a special warrant to be issued, conferring the distinction of "Seedsmen to His Royal Highness" on Messrs. Hogg and Robertson of Dublin, of which firm Mr. Robertson is the active partner.

We are informed that the Council of the Royal Agricultural Society have awarded to Messrs. James Carter & Co. a silver medal for the success that has attended their efforts in practically illustrating their system of laying down land to permanent pasture lawns, &c.

The prizes offered by Messrs. Daniels, Brothers, for the heaviest and best three specimens of the Defiance Giant cabbage grown from seed supplied at their establishment have recently been competed for. Specimens were sent by over a hundred growers, and many of the cabbages were remarkable, not only for size but quality. The premier exhibits came from the Isle of Wight, and others from various districts. There were numerous competitors in Norfolk, but their specimens, though large by themselves, were small compared with the prizewinners. The following is the prize list:—First, Mr. S. Osborne, Old Park, Ventnor, Isle of Wight; weight 86 lb. 8 oz. Second, Mr. T. Creed, Kemsdale, Faversham, Kent; weight 85 lb. 14 oz. Third, Mr. E. Pitts, Mirables, near Ventnor, Isle of Wight; weight 85 lb. 12 oz. Fourth, Mr. E. Samuel, Sawston, Cambs.; weight 84 lb. 14 oz. Fifth, Mr. E. Nunn, Heybridge, Maldon, Essex; weight 83 lb. 4 oz.

#### BEE-KEEPING AT CARLUKE.

LAST year my health improved during a stay of ten days at Carluke, which is a high-lying bleak country place in the centre of Lanarkshire. On my return to England I resolved to revisit the place and make a longer stay this year. In making arrangements to leave home for a season the apary presented the greatest difficulties. Who could or would manage my bees if they were left? Nobody. So I resolved to take my bees with me, and hence made arrangements with the London and North-Western Company to carry them by passenger train (in a horse box), from Manchester to Carluke, a distance of two hundred miles, at a carriage rate of 14d. per pound. Well, on the 21st of June thirty hives and their owner left Manchester at 11 A.M., and arrived at Carluke at 6.40 P.M. Neither the hives nor horse box were sufficiently ventilated for a warm day in summer, and the bees suffered much by the way. The fault was wholly my own, as ample ventilation would have prevented the slightest injury to either combs or bees. My bees will be my playthings here for a while, and, weather permitting, they will gather honey enough to pay expenses and keep me in pocket money.

The spring months, it appears, have been more favourable for bees here than in the north of England, for swarming commenced here in May this year. Many of the earliest swarms have their combs down to their boards already. I am pleased with all I have seen. Hives, though not very heavy, are strong in bees and able to do a great deal of work. The bee-masters themselves, most of them working men, are in fine tone and full of hope and enthusiasm. Their success in 1878 and other years gives them great confidence. Having had one, and in many instances two good swarms, from each stock hive already, all they now care about is weather. The profits last year in some instances were greater than those which were mentioned last autumn in this Journal. Mr. James Rennie from eight stocks and their swarms realised £40, and good stocks for this year. From one hive and its swarms Mr. Caldwell sold honey to the amount of £8, and increased his stock threefold. This is encouraging work, and done by the sons of toil who never use artificial pollen or artificial foundations, or modern inventions of any kind.

The swarming mode of management is generally approved and followed here. Early swarming is aimed at, and two swarms from every stock hive are coveted. This year, which is a late one, the bees here began to swarm naturally in May, and May swarms generally speaking have their hives filled or nearly filled with combs by the time clover comes into flower. One bee-keeper told me yesterday that the honey of gooseberry bushes and sycamore trees is so green in colour that it is hardly saleable either in the comb or out of it. I was surprised to hear this, for I consider the honey gathered from these plants is richer and higher flavoured than either clover or heather honey, which take best and sell most readily in the markets of Edinburgh and Glasgow. The honey plant here that comes in immediately after Sycamore is field mustard, which yields a clear honey but not very high flavoured. Well, there may be wisdom in keeping bees breeding and building combs to a great extent, while the least saleable honey is being gathered. Another reason, and the main one, for adopting and practising the swarming system, is the fact that it is the most natural and is attended with less risk of losing swarms. Practical men know well that there is immense and continual risk of losing swarms on the non-swarming system if bees are not constantly watched, and working men have not time to do this. Again, it is well known that with a multiplication of swarms within certain limits there is in good seasons a multiplication of bees, young queens, and combs, giving the bee-

master a choice of stocks, and an opportunity of making stocks doubly strong in autumn by uniting the bees of honey hives to those that are kept for stock.

Supering, eking, and nadiring are resorted to in giving bees room, and there does not seem to be existing here a prejudice against any of these modes of enlargement; and the hives in use admit and facilitate all the arts of apiculture, save and except what is called the moveable-comb system. While I admire, commend, and follow the practice of the bee-keepers of Carlisle, I cannot fail to see and know that their great success is owing to the excellency of their management in a great degree. Everything is done at the best time and in the best manner, and this is the secret of success in all systems and with every kind of hive. Whatever is worth doing should be done well, and wherever this principle in farming, gardening, bee-keeping, and other pursuits is carried out with constancy the results are good and satisfactory. Inattention in bee-keeping with all kinds of hives and systems is a very short road to failure. Bee-keepers themselves are often more at fault than the weather, their bees, or their hives.—A. PETTIGREW, Carlisle, Lanarkshire.

### WHAT A DIFFERENCE!

(Translated from the German.)

WHILE, according to the statements of men of science, the succession of changes of climate consequent upon the change of seasons takes place most regularly in many parts of the world, and more especially in tropical countries, in our own country the variations of climate are very great. This is especially the case as regards spring time, which sometimes commences early and sometimes late, and is otherwise very variable.

It will perhaps hardly be possible to determine the real cause of this difference, as the length of the days and the position of the sun in the heavens, as well as his power of radiating heat, remain the same from year to year. In my opinion the best explanation that can be given is, that when the masses of ice in the northern regions begin to move a larger or smaller number of these blocks or icebergs are driven by storms towards our shores, and we feel their effect in the prevailing low degrees of temperature.

Although this changeable weather affects every agriculturist, still more does it affect bee-keepers, for no other branch of industry is so entirely dependant upon weather as apiculture. Other branches of agriculture may still succeed in spite of high winds, cloudy sky, low temperature, &c., but bees are unable to collect honey and pollen if the temperature of the air be only one degree less than that at which they are able to work continuously; and if nevertheless they venture out visiting flowers, the injury to the colonies will probably be greater than any benefit to be derived from such excursions.

Of what bees are capable of doing early in the year if the weather is favourable we had proofs in 1848, the year of revolutions. Though I do not keep regular accounts of the state of the weather, still many events, from their being out of the common, produce such vivid impressions upon the mind that they are remembered long afterwards. In the year referred to the warm weather set in so early that at Easter (about the 20th April) the blossoms of the bilberry were falling off after the bees had collected large quantities of honey from them. In my apiary at Bankwitz the bees had gathered so much honey in April from a field of rape in the neighbourhood, that towards the end of that month I was obliged, in order to give the bees more room, to empty the honey compartments filled by them with new combs which they had stored with honey. The hives were completely full of bees and capable of giving off swarms at this early time of the year.

When I think of this and compare it with the sad state the stocks are in at the present time (nearly the middle of May) I feel inclined to exclaim: *O jerum, jerum! quanta mutatio rerum!* (how things have changed!) A greater contrast can hardly be imagined than a comparison of the spring of the present year with that of 1848 as regards the progress of the colonies. I do not remember breeding having commenced so late, and the development of the colonies altogether being in such a backward state for many years past. When the weather is seasonable the bees in the hive at this time of the year are generally numerous enough to cover their combs completely, and any parts of comb which the bee-keeper may have cut away will be found to have been replaced by them, but at present they are still concealed between the combs. The population of the hives is much less than what it was in March, and they scarcely have as much brood now as is usually met with in the hives in the month of February when the winter has not been too severe. Our actual winter the bees survived in tolerably good condition, but the second winter we have passed through has proved most disastrous to them, and so has spring until now. The very elements seem to have broken loose. It is reported from Szegedin, which town has been visited with such a terrible inundation, that even after the dreadful catastrophe the works for repairing the dams to protect the town were repeatedly destroyed by the agitated floods; here also frightful storms have been raging, blowing off and destroying the roofs of the hives in

my apiary, knocking down entire piles of hives, and otherwise damaging them.

The heaviest loss, however, will be due to the present unusually depopulated state of even the largest colonies. The bees from sheer necessity rush out of the hive impatiently during a moment of sunshine and perish in large numbers on these excursions; and while pasture would be plentiful if only the weather were favourable, we are now obliged to go to the trouble and expense of feeding the bees in order to keep them alive. They were not able to utilise to any extent the flowers of the hazel, the aspen, the willow, or the cowslip, nor the very melliferous blossoms of the gooseberry, the flowering time of which is now nearly over. Their visits to the gooseberry blossoms were limited to one fine day, the consequence being that when on the following cold days they again left their hives, most of them were lost. The bilberry is at this moment in full flower, and is a great attraction to bees in the neighbourhood of woods and forests on account of the quantity of honey it yields; but its time of flowering will probably also pass without being utilised by the bees, for the temperature is so low that we had a fall of snow here last night, which, indeed, disappeared from the ground the next day. Still an intensely cold north wind continues to blow, which makes it impossible for any bee to show itself outside the hive, and so far there does not appear any prospect of an immediate improvement in the weather.

This deplorable state of things affects me most painfully, because I had engaged to supply fertile queens or small colonies of the beautiful, gentle, and industrious Italian bees. I am quite willing to fulfil my promises, but it will perhaps be a month later than I should have been able to execute the orders if the season had not been so exceptional. Circumstances indeed are stronger than the will of man. Man is powerless against the forces of Nature, and compelled to put up with what is beyond his power to alter. I trust, then, that bee-keepers will not lose patience in these trying circumstances, but look forward to better times, which surely will succeed this unusually bad season. The Latin proverb is: *Post nubila Phœbus*, or as we say in German, *Auf Regen folgt Sonnenschein* (After rain comes sunshine).—DR. DZIERZON, Carlsmarkt, St. Pancras' Day, 1879.

### THE BEE TENT AT KILBURN.

(Continued from page 20.)

ON the second morning of the Show the powerful gale and heavy rain of the previous night was found to have wrecked the tent and deluged many of the exhibits. The Hon. Secretary with admirable promptitude and energy at once set machinery in motion, which put all as right as bad weather would admit of by Wednesday morning, and in the afternoon amidst occasional drowning showers the driving competition took place. Of the four competitors Mr. Abbott, sen., occupied least time (14 minutes) and so won, while his son was altogether behind through failing to find his queen. Messrs. Baldwin and Martin were about 4 minutes longer than Mr. Abbott, sen., but since they drove in each case large skeps containing more comb by much to transfer than that found in the one handled by the winner the difference in time is accounted for. Mr. Martin drives admirably. He has a tub cut askew, upon which his skep is placed so that the part from which the bees are to run stands highest. Two of the staves at the side of the tub next the operator are removed, and the opening thus made gives an opportunity for putting on the skep roof. This he did occasionally and gently. The bees left well, while the jar was so slight that a swarm with combs just built might have been operated upon.

The hives are in many respects disappointing, as some of the exhibitors seem to be seeking rather novelty than utility or convenience. The first prize was awarded to Mr. Abbott for a very complicated arrangement carrying forty-six sectional boxes, some of which in my judgment are badly placed beneath. The body contains the usual division boards, while the frames are set across the mouth. Zinc queen excluders with oblong apertures preclude ovipositing in the lateral and upper sections, but those beneath, which are most likely to be visited by the queen, are not so protected. The external surface of the hive is very great, and heat from it in chilly weather must be fully dissipated. Its one distinguishing feature is a copper bottle running into a crown board made hollow to receive it. This bottle is to be filled with hot water to warm the sections which stand over it, so that the bees may be induced to accept them. It thus separates too much the sections from the main body, while, when the bottle has done warming the bees, the bees will have to warm the bottle. This is one of those improvements for which we venture to predict a short life. Mr. J. M. Hooker obtained the second prize for the most highly finished hive in the class, but which is entered "not for sale." The alighting board is low to save queens with defective wings and labour to laden workers. Should a swarm issue a body box, similar within to the first hive, is provided to receive it; this is then placed over the stock and allowed to work separately until its combs are furnished with brood, when stock and parent, according to exhibitor, are united, and give an immense population



for super work. The crate of supers is very ingeniously fixed with parallel wedges, while the carpet cover for this crate has two slats nailed to it, which drop over the sides when the carpet is in position and hold it at once.

Messrs. Neighbour stand No. 8. The sections are here placed in frames laterally and in a crate above, with queen excluders, straw in wooden frames forming the cover board. Mr. Clapp (highly commended) gives a convenient method of holding down the edges of the quilt by folding slips turning back on hinges. The floorboard is reversible and the hive well made. The Myrtle hive has a very admirable method for hinging the super case, which stops when standing at right angles to its shut position, while the cover can be lifted off as desired and returned to its hinged position in a moment. Mr. Jas. Lee (highly commended)—his dummy is new and convenient. Mr. Thorn (highly commended)—good hive, sensibly arranged in two body boxes, both to carry frames and sections.

Mr. Watson shows a curious hive, with semicircular frames far too small to be of any real value. The comb space is not very much greater than half that of the Woodbury. It carries novel supers made of rings of earthenware. These are pretty when filled, but ought to be carefully jacketed to secure warmth. Mr. Martin exhibits a new adaptation of the Stewarton slide, which is made to run in the hive sides, giving admission to lateral boxes. An Everett extractor with A. J. Root's gearing attracted much attention. Here the honey passes through a strainer before it reaches the tap beneath. It is accompanied by an uncapping knife with thick blade bevelled towards each edge, so as to prevent the drag occasioned by a large surface of metal touching the comb. This knife should be remembered by all about to buy an extractor. Mr. Newman, the courteous Editor of the "American Bee Journal," is a visitor with us. He addressed in inspiring and eloquent terms one of the gatherings in the manipulating tent on Friday, his remarks meeting with a hearty response. The whole Exhibition has been amongst the most popular with visitors of any of the many things Kilburn has had of late to show, the manipulations attracting crowds who have not only been surprised, we hope, but have been enlightened, and made in many cases the teachers to others of new ideas.

Here I have been constantly plied with questions showing the deep interest taken, while the value of that form of hive which admits of the use of the extractor is beginning to be seen with clearness, even by those who as yet use skeps only. The bearing of the advocates of fixism is in a marked manner changed from that which I remember at the first Crystal Palace Show. The determination of the Committee to close on Monday, according to the original programme, was heard with regret by those high in authority at Kilburn, who thus give testimony to the great attractiveness of this section of the Exhibition. On Saturday Royalty again honoured us. H.R.H. the Duke of Cambridge, accompanied by the Duke of Sutherland, Countess of Yarborough, and several other notabilities made an inspection, lingering while explanations were given of the salient points. The Committee are now making arrangements for increasing the educational value of the tent manipulations at Kensington on the 22nd, 23rd, and 24th inst.—F. CHESHIRE, *Avenue House, Acton, W.*

## WAX IMPRESSED SHEETS—SWARMING IN 1879.

I HEARTILY thank your correspondent "J. S." (page 489) for his lucid remarks upon my tentative experiments with the impressed wax sheets. The record of my failures and disappointments will not have been written in vain if his experience shall be a guide to others in a like predicament. Since I wrote, and before seeing his remarks, I had adopted his method of affixing the comb as guides along the bars to the depth of an inch or more in the case of a recently constructed laterally expanding hive, which I hope to people to-morrow with a large expected swarm.

Talking of swarms leads me to observe that swarming this year is both unusually late, as indeed was to be expected, and in my case has been attended with the loss of the queen on two occasions, when the prime swarms went off in the midst of a strong gale of wind. I am now waiting for the issue of two second swarms, which ought to be enormous if they do not divide. Observing this tendency, and fearing the loss of a valuable imported queen, I made a swarm artificially the other day by simply transferring a couple of frames containing some half-dozen tenanted royal cells into an empty bar-framed hive and putting it in the parent hive's place. They appear to be doing well, so far at least as the wretched weather will allow them. The parent stock is quietly removing a lot of drone grubs, the heads of which were sliced off before replacing the combs. Not one of my swarms has issued in fine weather. On every occasion the weather has been most unsuitable, but the poor insects appear to have lost patience and resolved to avail themselves of the first gleam of sunshine.

Since I wrote the foregoing one of the two expected second swarms has issued, but again in a gale of wind, and again with the same result—the loss of its queen and the return of the swarm to the hive. This same swarm issued again on the 80th after an interval of two days, during a gleam of hot sunshine in the midst

of thunder showers. It settled all right on an espalier, but too near the parent hive, in consequence of which the young queen must have taken wing in the act of being hived and returned to the old home, as the bees all returned there in the course of an hour or two. How they manage to live is a mystery, as no honey is visible in any cells from the windows, and the weather continues to keep the bees idle at home.

We amused ourselves after the event last mentioned by examining and re-arranging the combs in the swarms of June 16th and 24th, after our new lights as to the use of impressed sheets. Some of the whole combs had sagged, as was to have been expected. These were trimmed or removed, and properly arranged combs introduced. Not a particle of sealed honey could be seen in either of these hives, and scarcely any in the open cells.—B. & W.

## OUR LETTER BOX.

**BRAHMA DORKINGS (M. B.).**—If you wish the progeny to be dark have both parents dark; if you wish for light-coloured birds have both parents light-coloured.

**PHEASANT CHICKS (H. Wood).**—They hatch in the same time as the domestic fowl and require the same treatment. Consult our "Poultry Book."

**DEATH OF DUCK (Capt. Jackson).**—Death was caused by some poison. Wild Ducks often frequent salt marshes.

**BEES IN WOODBURY HIVE (W. B. C.).**—From your account it seems probable that your bees have partially descended into the Woodbury; but why not lift off the straw skep and see? We doubt, however, whether they will make that their permanent dwelling if left as they are, seeing that the mass of comb is in the skep. If the weather is as bad with you as it is and has been with us we should be disposed at once to transfer the combs of the skep to the Woodbury bar-frames, as there is hardly any breeding going on and no honey in any quantity to trouble the operator. Doubtless we shall have something of a glut of honey towards the middle or end of the month.

**STEWARTON BOXES—FAILURES IN HIVING (A Constant Reader).**—Our Scotch friend to whom we referred your case says, "Your correspondent seems to have acted according to instructions quite right. The failure seems to me to have resulted from uniting a second swarm with a virgin queen and disproportionate numbers when no honey was abounding, instead of a first swarm when honey was abounding. Both swarms should be sufficed with honey when united." Supposing that all was rightly done according to instructions we are inclined to think that the second swarm added (whether prime swarm or cast) was in a state of semi-starvation. Bees will not welcome new comers unless they have an extra good suck of honey, as they always have in ordinary seasons when swarming. This it is which makes bees weigh so heavily in the swarm. But it is quite impossible to say certainly why or how you failed so lamentably. Any incautious knock or jar to either hive would be enough to excite angry feelings, and to make them receive the new comers with more than suspicion, as they would naturally attribute the disturbance caused by the jar (which to them would be as an earthquake to us) to the fresh arrivals. Then, bees are capricious creatures, and can never be trusted to act according to rule.

**BEES CARRYING OUT DRONES (Apis).**—Your bees are in despair. They see no signs of summer coming; and so, believing it to be postponed for a twelvemonth, they are naturally getting rid of all supernumeraries and making preparation for a hard winter with a scarcity of food. You may make an artificial swarm, but with only one hive it is a risky thing, unless you can examine it and see whether there are any forward royal cells. If you do, mind you feed both hives should the weather not improve. You do not say whether your hive has frames or not.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 39' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.						Rain.
1879.	Baromet- ter at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.				
July.		Dry.	Wet.			Max.	Min.	In sun.	On grass.			
We. 2										Inches.	deg.	
Th. 3	29.575	58.3	52.4	W.	56.6	67.4	50.4	121.8	47.0	0.471		
Fri. 4	29.489	54.4	53.6	S.W.	56.6	57.6	50.8	70.9	49.3	0.380		
Sat. 5	29.640	57.3	52.4	W.	56.7	64.6	47.8	112.9	44.6	0.064		
Sun 6	29.802	58.1	52.7	W.	55.9	65.1	49.0	123.2	45.4	0.079		
Mo. 7	29.959	56.0	50.7	W.	55.9	65.3	47.1	102.4	44.6	0.301		
Tu. 8	29.720	60.0	58.2	W.	56.4	70.6	55.4	122.4	51.1	—		
	29.512	58.0	53.6	S.W.	57.0	66.8	49.8	100.0	45.3	0.380		
Means		29.681	57.4	53.4		56.3	65.4	50.0	107.7	47.3	1.065	

## REMARKS.

- 2nd.—Showery throughout the day with occasional intervals of sunshine, thunder about noon and sharp thunder storm 4 to 5.30 P.M.; fair
- 3rd.—Rain almost incessant; very dark in morning. [evening]
- 4th.—Cool with heavy showers during the day; fine moonlight night.
- 5th.—Showery with intervals of bright sunshine; high wind.
- 6th.—Fair but dull morning; rain commenced about 3 P.M., continued until 6 P.M.; fair evening.
- 7th.—Showery in morning, fine with bright sunshine after 1 P.M., and high wind, fine evening.
- 8th.—Very high wind and showery; gale of wind, rain, and hail at 1.10 P.M., much heavier storm at 5.30 P.M.; fair evening.

A cool, wet, autumnal week with much wind.—G. J. SYMONS.

## COVENT GARDEN MARKET.—JULY 9.

EVERYTHING is still backward, the Middlesex growers only now putting in an appearance with Strawberries, accounts of the fruit prospect being desponding all through the home counties unless a change takes place very shortly. Prices remain the same with evident signs of a falling-off in the demand.



## WEEKLY CALENDAR.

Day of Month	Day of Week	JULY 17—22, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.			
17	TH	Grantham Horticultural Exhibition.	74.3	51.3	62.8	4 4	8 7	1 42	7 6	28	5 51	198				
18	F	Helensburgh Rose Show.	74.7	50.3	62.5	4 5	8 6	2 47	7 41	29	5 56	199				
19	S	National Rose Society's Show at Manchester.	73.2	49.9	61.1	4 7	8 5	4 0	8 8		6 1	200				
20	SUN	6 SUNDAY AFTER TRINITY.	73.2	50.3	61.7	4 8	8 4	5 17	8 29	1	6 5	201				
21	M	Oxfordshire Horticultural Exhibition.	74.0	50.8	62.4	4 9	8 3	6 36	8 47	2	6 8	202				
22	TU	Rh. Hort. Soc.—Fruit and Floral Committees at 11 A.M.	73.2	51.4	61.8	4 11	8 2	7 56	9 4	3	6 11	203				
23	W	Caterham Horticultural Exhibition.	74.0	51.4	62.7	4 12	8 0	9 17	9 19	4	6 13	204				

From observations taken near London during forty-three years, the average day temperature of the week is 73.7°; and its night temperature 50.7°.

## THE PLEASURES AND BENEFITS OF HORTICULTURE—FRUIT PROSPECTS.

**A**LTHOUGH an amateur only, I have for several years past looked forward with pleasure to Thursday, the day which brings me another number of the *Journal of Horticulture*, and extends my acquaintance with those who habitually write in it. To many of those writers, although knowing them through their writings only, I can hardly avoid expressing my gratitude. Whilst in the active practice of my profession one of my chief recreations was to devote a few minutes daily to Grapes, flowers, and orchard-house trees. Although the minutes were short and snatched from graver work, still, by following a system, they sufficed. To take to the bedside oneself a tempting bunch of Grapes, a juicy Peach, or even a few flowers—to minister in some way or other to the comfort of the feverish or languid patient, is a luxury which medical men have peculiarly the privilege of enjoying. In all this I derived great help from the *Journal of Horticulture*; and I believe that many of my medical brethren, both the hard-worked and the over-worked, might be made happier and healthier by giving a few moments on each day or in each week to the perusal of its pages. Few things will prove better to unbend the mind and furnish a new train of pleasant thoughts than the cultivation of a garden.

Nor is it difficult to acquire very soon as much knowledge as to kindle an active interest to know more. The writers to whom I refer are so clear, often so graphic, so bent on saying all that they know on a subject, recounting their failures as well as their successes, that any person with a trained intelligence and a love of knowledge may in a short time put what he has learned in practice. Their candour indeed has often reminded me of a leading principle in my own profession—to have no secrets, but to impart everything in the shape of knowledge for the general good. For as knowledge is the result of the combined experience of many minds in all times, so it is the duty of those who have received of the common stock that they should be ready in their turn to give also. None of the writers in question convey more in a few words, I think, than Mr. William Taylor; and it is the terse narrative of the fruit prospects under his own eye in the *Journal* of the 3rd inst. that has tempted me to follow him, however humbly, by saying what has happened to me.

I ought to state that my garden is on the southern slope of a Surrey hill, looking down upon the broad weald of Sussex. It is at least 500 feet above the sea, and is fairly protected by higher ground on the north, east, and west, but not to an extent to deprive it of the full advantage of sunshine (at least when there is such a thing) all day long. It is to some extent, but not completely, shielded from the south-west winds, which traverse probably over thirty miles between the sea and us. The soil is a deepish loam resting chiefly on clay, but in a few parts on sand. Besides being on a slope, it is drained artificially.

In this garden four years ago about 250 bearing trees

of Apples, Pears, Plums, and Cherries were planted. They are mostly pyramids and bushes; but there are several on walls, some espaliers and a few standards. They have mostly grown freely and give proof that the soil suits the majority. Last year a considerable number bore fruit well. This year the crop will be an almost complete failure. The Apples and Pears blossomed well, but under the influence of the long, cold, wet, sunless spring the fruit did not set, or it dropped off in its earliest stage.

Among Pears Louise Bonne of Jersey, Winter Nelis, and Souvenir du Congrès have fared best out of thirty or forty different varieties. Of the first I have seven trees; two on walls, the others pyramids. They have all a moderate crop, and one on a west wall a full crop. Winter Nelis on an east wall has a good crop, whilst of several pyramids most have some fruit. A pyramid of Souvenir du Congrès bears a heavy crop, and several bushes of Joséphine de Malines and Knight's Monarch have a sprinkling of fruit. Several of the fruitless trees, notably Marie Louise, have their leaves, either wholly or in round spots, blackened as if scorched. The pyramids of this variety, which blossomed well and looked promising, have lost their fruit, and many of the younger branches are black and shrunken, with withered leaves still clinging to them. On a west wall a tree, although it has lost its fruit, does not look unhealthy.

Of a considerable variety of Cherries a Morello on a north aspect and a Governor Wood and May Duke on a west aspect promise fruit. Of the others, several blossomed well, but most of the fruit has lately fallen off. The Plums, which look healthy and vigorous, have an insignificant crop of fruit. Victoria, Coe's Golden Drop, and Belgian Purple are the best. The different kind of Gage mostly blossomed well, but the fruit has all fallen. I may add that bullfinches, owing to the slowness with which the buds unfolded, had an opportunity this spring of doing more mischief than usual.

Apples have, perhaps, more signally failed than other trees, although the display of blossom was superb. In addition to the smaller trees in the garden there are about forty full-grown standard trees around the grass fields. Of these a White Heart Cherry and several Plums, prolific last season, are fruitless this. Two huge perry Pears have good crops; they blossomed well, and one of my men, who has known them for years, says that whenever they do this they bear fruit. The remainder are Apples, which are mostly without fruit; but one or two bearing local names have great crops. Of three Apricots trees, the varieties the Moorpark and Peach, on walls, two are dying fast as Apricots often do; the other a large tree, which looked healthy in the beginning of the season, seems inclined to follow their example. Gooseberries and Currants are heavily laden with fruit.

In striking contrast to most of this is our unheated orchard house, where the trees are weighed down with choice fruit, and where for a fortnight past we have been gathering Strawberries of huge size and good flavour. In fact a thin screen of glass is all that separates exuberant fruitfulness within and utter barrenness without. A dry genial air is on one side, chilly dampness on the other, and

yet the treatment and the soil are the same without as within. I will send a brief account of this orchard house for a future number.—A SURREY PHYSICIAN.

### THE POET COWPER AS A GARDENER.

It does not appear that any one of the biographers of Cowper has given due prominence to the love of gardening which was so noticeable in his character. Moreover, much might be said, were it relevant here, upon the beneficial influence that his gardening pursuits had upon the oft-distressed poet in soothing his nervous irritation and banishing, for the time at least, his mental perplexities. Had it not been for these we might never have had some of his sweetest verse. In a letter to Mr. King written at the age of fifty-seven he remarks confidentially, "Gardening was of all employments that in which I succeeded best, though even in this I did not suddenly attain perfection. I began with Lettuces and Cauliflowers; from them I proceeded to Cucumbers, next to Melons. I then purchased an Orange tree, to which in due time I added two or three Myrtles. These served me day and night for employment during a whole severe winter. To defend them from the frost in a situation that exposed them to its severity cost me much ingenuity and much attendance. I contrived to give them a fire heat, and I have waded night after night through the snow, with the bellows under my arm, just before going to bed, to give the latest possible puff to the embers lest the frost should seize them before morning. Very minute beginnings have sometimes important consequences. From nursing two or three little evergreens I became ambitious of a greenhouse, and accordingly built one, which, verse excepted, afforded me amusement for a longer time than any expedient of all the many to which I have fled for refuge."

From various references in his poems and letters he evidently cultivated a variety of flowers both in this greenhouse and in the open borders of his Olney garden, and sundry allusions imply that he also nurtured wall fruit; see the "Task," book iii., the passage commencing—

"Proud of his well-spread walls, he views his trees,  
That meet (no barren interval between)  
With pleasure more than even their fruits afford,  
Which, save himself who trains them, none can feel.  
These therefore are his own peculiar charge;  
No meaner hand may discipline the shoots,  
None but his steel approach them."

The same poem contains a very minute description of the method of growing Cucumbers pursued by him; but although he could produce Cucumbers he could not eat them, as he remarks humorously. One transmitted to his friend Newton furnished a riddle for the amusement of both—"I send a Cucumber, not of my own raising, and yet raised by me." As he subsequently explained, he had reared some Cucumber plants from seed, and one of the Cucumbers produced he had given to a gardener at Tyringham. He had sowed the seeds, and one of his plants bore the Cucumber which Cowper had sent to Newton; so that the poet argued he had in one sense raised the Cucumber, because he had reared its progenitor, though the actual parent had been grown in another garden.

A *propos* of Cowper's greenhouse, we must remember it is not identical with the little place he calls his summer house, and in which he wrote many of his poems; but he and Mrs. Unwin did sometimes sit in the greenhouse, when the plants were put out during the summer season, the glass being shaded with mats. In one letter he depreciates this greenhouse, calling it an affair which Lord Bute's gardener might put upon his back and walk away with, in which remark must be somewhat of poetical exaggeration. In a letter to Mr. Bull, of 1783, Cowper says, "Our greenhouse is a cabinet of perfumes. It is at this moment fringed with Carnations and Balsams, with Mignonette and Roses, with Jessamine and Woodbine, and wants nothing but your pipe to make it truly Arabian! And in the "Task" he has recapitulated a number of other species, which it may be presumed he had grown, but there is some difficulty in identifying several of the plants named. (See book iii., "The Garden.") His "Amomum," Professor Williamson suggests, may have been Myrtus Pimenta; his "spangled Bean Ficoides" the Mesembryanthemum crystallinum. Occasionally his botany was at fault, as when he designated Poplars "Elms" in one of the books of the "Task," a subject on which he was frequently joked by his friend the younger Throgmorton. And we have slight doubts concern-

ing the true appellation of the plants introduced in his account of a suburban garden—

"A garden in which nothing thrives has charms  
That soothe its rich possessor; much consoled  
That here and there some sprigs of mournful Mint,  
Of Nigeltada, or Valerian grows, tho' well  
He cultivates."

Cowper also took a special interest in the cultivation of the Pine Apple. A little incident connected with the visits paid by the bees to his frame led to his writing one of his well-known shorter poems. He tells Unwin, September 21st, 1779, that he had himself glazed the two frames destined to receive the plants he was expecting from Jamaica, and he appears to have given seeds or plants to Mr. Wright, gardener to Lord Dartmouth. From a remark in a letter to Mr. Hill we gather that he had applied heat to his plants by means of bark, as was then commonly done, but he found in experiment that "leaves gathered at the fall hold their heat much longer than bark, and are preferable in every respect. For Myrtles he evidently had a particular regard; his letters allude to his having purchased them in Covent Garden when he was a law student, and to his friend Newton he gives exact cultural directions—the plants were to be watered in summer every other day, in winter twice a week. At Michaelmas he advises repotting with fresh earth, and once in two years that the matted roots be pared with a sharp knife. To Cowper it was a high gratification to visit the splendid gardens of some of his wealthy neighbours, and it was one of the inducements to remove to Merton that he was brought nearer the grounds of his friends the Throgmortons at the Park. We may add that there are still sold in Olney plants and seeds which are presumed to be descendants from those cultivated by the gentle poet.—J. R. S. C.

### FRUIT PROSPECTS.

I AM very much afraid that those who recently took a sanguine view of the fruit crops are doomed to disappointment. I have this week personally and carefully examined three large gardens, and also made inquiries of competent persons concerning other gardens, and I sincerely hope that this part of England (and I live almost in the Bath district), one famous for fruit, is the exception to the rest. We have had as yet but one summer day—namely, June 18th. Up to the time I write (July 5th) intensely heavy storms, some lasting for many hours, have been constant; the rain pouring at times so heavily that spouts, shoots, and drains failed to carry it off. The ground is saturated, the roads such as are usually seen during a wet winter. My bedding plants are not growing, not even the Geraniums flowering.

But to come to fruit. The Pear crop is next to nothing, and the strong gales have sorely beaten the trees about. I should observe also that the temperature has been very low; on July 1st it was down to 41°. Fancy this in proverbially sultry July! Passing from Pears I come to something much more serious—the loss of the Apple crop. Espaliers are the worst, probably from being shaped so as to catch the rain on both sides. The blossoms became brown, and as Wiltshire people say, they are "gone all of a scrump." Standard trees have an extremely poor crop, as these trees from their height have caught the winds so much, and besides they are heavily blighted. I have looked up through trees which are sparsely covered with leaves as if it were late in the autumn; the leaves are on the ground black and curled.

As to pyramids, the form in which I chiefly grow Apples, the leaves are as yet fairly good. As to fruit, the only tree on which I have a heavy crop, and as yet doing well, is Stirling Castle, an excellent Apple from blossom to eating, even very handsome in shape when quite small. The next best is Irish Peach, which holds its crop well, and the Apples are growing; Margaret a fair crop, Emperor Alexander just a few, Summer Golden Pippin fewer. I should observe, too, that Glamis Castle, Cellini, and especially Ecklinville Seedling, are holding their partial crop very well; Joanneting nil, Lord Suffield nil. Here I would observe that we must not part with old friends too readily. I have a Keswick Codlin growing close to Lord Suffield, both the same age, the former fairly cropped, the two latter not bearing a single Apple; they blossomed well, but the wet and cold have utterly destroyed all; there are the blossoms "all of a scrump"—mere wet brown bunches.

It is well to notice how badly or, on the contrary, how comparatively well, certain Apples bear a cold wet season. Lord

Suffield is the worst I have, Duchess of Oldenburg fair only, Cox's Orange Pippin bad, and even that grand kitchen Apple New Hawthornden holds on a very small number of Apples, though the tree is perfectly healthy in leaf and wood. Golden Pippin nothing, Sturmer Pippin the same; Dumelow's Seedling, a few on one tree none on another. Even the old Hawthornden has but very few. I have two standard trees of Lewis's Incomparable which are miserable blighted failures—trees from which in ordinary years I have gathered many bushels. Pomeroy even worse. I have not reckoned many trees of last year and the year before's planting, from the former of which I expected nothing and—I have got it.

I pass on to Plums. All the better and choicer kinds, such as Green Gage, Cox's Golden Drop, and Ickworth Impératrice, are complete failures. The coarser and common kitchen Plums stand better. As yet my best cropped trees are Damsons, a Bullace, and a coarse egg-shaped Plum, name unknown. Cherries appear to be better, particularly on walls. Currants plentiful, and also Raspberries, and I hear no complaint about Strawberries; but I expect great disappointment in all if this cold and wet weather continues. Gooseberries, where the bullfinches have been shot, are a capital crop.

Fruit-growers have feared May frosts. This May there were not any, but a low temperature, much wind, and much rain have proved worse foes than spring frosts. Of Potatoes, save in frames, there are not any as yet. I hope and trust that fruit-growers in the midlands and south of England will be able to give a better account than I can who live in the west. A gardener—a jobbing man—who therefore sees a great many gardens, tells me that as a rule the only good crops of Apples are the early eating varieties, and that all the late Apples, of course the most important, are gone. Leaf blister abounds on the wall trees unprotected by glass. Peaches, Nectarines, and Apricots are conspicuous by their absence.—WILTSHIRE RECTOR.

THE fruit prospects in Gloucestershire under the influence of the ungenial weather that we have experienced since I last wrote have not improved; they have, in fact, rather gone back than otherwise. Rain fell on twenty-three days in June and for the first nine days in July. Some of the Apple bloom which appeared perfectly set has dropped off the trees, and some of the Plums being unable to grow have turned yellow and will not come to anything. There is yet time for a good crop of Strawberries and Raspberries, but more sun is urgently needed to ripen the crop. I gathered the first Strawberry July 5th, a month later than in some seasons. Potatoes on the dry land here are looking well in the top, but they are unusually late, and in the majority of cases not fit to dig at the time I write, and as the old ones are gone the poor people are at present without any. I fortunately have some of the old original Ash-leaf, and I find them very useful this season as they are now of a good size. I do not share the opinion of your Welsh correspondent as to the fear of much disease this year; the weather has not been warm enough for the fungus, and in 1860, a season which this up to the present time very much resembles, there was not very much loss by the disease.

There is one point to which I should like to draw the attention to your readers, and that is the necessity in the present cold backward season of getting out the Broccoli and winter greens, &c., as soon as possible, or they may not do much good. I am planting between the Potatoes in every other row. The tops are turned back over the unplanted rows so as not to interfere with the plants by shading them too much.—AMATEUR, Cirencester.

### CAMELLIAS AND AZALEAS.

THE practice of placing Camellias outdoors after the buds are set is not a commendable one, as the foliage is liable to suffer unless the plants occupy a position partially shaded from the sun. The buds also not unfrequently drop, owing to the loss of roots caused by drought or by the soil being saturated by late summer rains. A cool airy house is more suitable to them after the buds are set, with just sufficient shade to protect them from strong sunshine. Plants for early flowering that have set the buds and are of considerable size may be placed in a house with a north aspect, or at the back of a north wall; for though all attempts at retarding the buds will be futile if they get too forward for the time the flowers are required, yet they will come on more slowly in such positions than in more favourable aspects. It should also be borne in mind that if

flowers are required early in the autumn they can only be obtained by correspondingly early growth, and the plants must be brought on gradually, as anything approaching to forcing in the later stages will only end in the buds dropping. Plants that have completed their growth must not be retained in moist heat, or they will start into a second growth. Less supplies of water will be necessary now, yet there must not be at any time any deficiency.

Azaleas that have set their buds should, after being removed to a cooler house for a short time, be placed outdoors on the north side of a wall for a few days or in a shady position, so as to prevent the leaves from becoming brown. Later plants should, as soon as the growth is complete, be removed to cooler quarters if they have been placed in warm shaded houses to make growth, and when the buds are set place the plants outdoors. The plants that flowered latest should have the growth encouraged by keeping the house close and moist, affording slight shade from bright sun, and at the same time keep the plants near to the glass, as the more light the leaves are exposed to during their formation the stronger their texture, the stouter the wood, and consequently the buds and trusses of bloom. Afford no more shade than may be necessary to prevent scorching. Freedom from insects—i.e., thrips and red spider, and plenty of light during the season of growth, are essential to success in Azalea culture, as when the leaves are thin in texture they frequently fall in winter, and the flowers are not only small but badly coloured.—AN OLD GROWER.

### EFFECTS OF THE WINTER.

It may possibly interest some of the readers of our Journal to hear that the following plants withstood the last severe winter without any protection whatever at an elevation of 230 feet above the sea.

*Primula japonica* in the coldest place in the garden is (July 8th) 2 feet high, and has four whorls of seed surmounted by one of flowers. *Cyrtomium falcatum* from Japan is much browned and its young fronds are growing sparingly, but C. Fortunei, which I used to consider the more tender of the two, has many young fronds 24 inches in height, and one plant, though not so tall, has eighteen of this year's growth. *Lastrea opaca* (Japan) is growing, and last year's fronds are fresh and green, and the same may be said of *Selaginella denticulata*. *Cystopteris bulbifera* (North America) is also shooting up. The next were protected by a cloche and are doing well. *Doodia aspera* (New South Wales), *Onychium lucidum* (Nepal), *Woodwardia radicans* (Madeira), *Adiantum Capillus-Veneris* from Portland, and *Polypodium Phymatodes peltideum*. I shall be glad if some of your readers will kindly give lists of exotic Ferns which they have found to be as hardy as those above.—C. T. H., Osmington, Weymouth.

### BLOOM ON GRAPES—RED SPIDER—SYRINGING.

A RECENT writer in the Journal gives directions how to secure a heavy coat of untarnished bloom on Grapes, and he lays especial stress on abstaining from the use of the syringe as a means to secure the desired end. As we look at the matter, and we do so in the light of experience, the writer of the article in question only touches the surface of the subject. We fear that were the directions on page 1 carried out good-coloured Grapes with a heavy coat of untarnished bloom would in a season or two disappear from the land. Good colouring and bloom depend, in our opinion, on the health of the plants and the regulation of atmospheric temperature according to the intensity of the sun's rays. Without syringing, or some other process equally fatal to colour and bloom, red spider is sure to put in an appearance, and when spider gains and keeps possession of the field farewell to vigorous growth, fine colour, and heavy bloom; at least such has been our experience in the past, and even in this year, with rain in great abundance all through the months of April, May, and June, our old enemy has shown front again. We did not syringe when there were no spiders to dash off and destroy. We did not fire until the Zulus of the vine appeared; but with the first appearance of spider we went for pall and syringe at once, and began. This was when the earliest bunches were almost finished, and just when we believe syringing is generally not attempted. But we did not syringe the bunches, but dodged this way and that, so that a tolerably forcible stream of water could be directed full dash against the enemy's stronghold—the backs of the infected leaves, without touching the bunches. A few drops fell on the

bunches, which we could not help; but they did the bloom little harm, as they shot off the berries as if from a duck's back. We shall adopt the same practice whenever the spider appears again. When the syringing is properly done it is the most effectual, economical, and cleanly of all modes of eradicating red spider, and in good hands the bloom of the bunches is tolerably safe.

We have become accustomed to read that red spider will not appear if the borders be kept properly moistened. We are quite aware that a dry border and debilitated trees favour the appearance and rapid propagation of the pest, but as we are very particular in having our inside border regularly and thoroughly moistened, and as our Vines are in exuberant health and properly cleansed when pruned in winter, and situated in a cold wet district, and as the spider appears regularly (just when the Grapes colour), we do not hesitate to pronounce such views groundless. Sponging the leaves we have no time for; sulphur painted on the pipes is, either as a preventive or a check, anything but effectual. The judicious use of the syringe we find an invaluable help, and by its assistance we keep the Vines in vigorous health, and we manage to produce Grapes which are large in bunch, large in berry, well coloured, and covered with a good coat of untarnished bloom.—SINGLE-HANDED.

### THE NEWCASTLE SUMMER SHOW.

JULY 9TH AND 10TH.

THE unpropitious state of the weather on the morning of the Show did not have the effect of inspiring the ardent and enthusiastic officials of the Society with that amount of confidence which their unflagging exertions deserved. Never perhaps has any horticultural society made such rapid strides as this one in so short a time. It is not many years since the prize money of the Society was only £30 a year, and this year it amounts to about £710. This success is no doubt the result of an unanimity of effort which exists amongst the Committee in furtherance of the interests of the Society, this Committee being principally composed of practical business men, who are thorough masters of finance and adepts at "raising the wind." Messrs. Taylor and French are no longer Honorary Secretaries, but still give their valuable services to the Society, and with Mr. Gillespie, the acting Secretary, form a trio of experienced workers which are deserving of great praise. Towards noon on the first day the weather cleared, and kept clear till the evening, when rain fell rather heavily, which marred the pleasure of the visitors, as the Society had provided a rich treat by illuminating the Exhibition. The second day was much better, and towards evening the Society were taking at the rate of £100 per hour at the nominal charge of 6d.; the efforts of the directorate may therefore be said to have been most successful.

Referring now to the Show. It has certainly been the best the Society has ever held. Many of the products possessed superior merit, and the prizes were in nearly all cases severely contested for. Roses and fruit were not strongly represented, the latter especially. Grapes were deficient in colour and quality, the result of almost the entire absence of sun and the extraordinary late season. Not so with the queen of flowers—the Rose, which although sparsely shown was represented by blooms of great excellence, and it was declared by good rosarians that better Roses were never exhibited at Newcastle than those staged by Messrs. Cranston & Co.

Leazes Park was the site of the Exhibition, and the Show was held in a series of tents, forming a large rectangular marquee of 150 feet long by 180 feet wide, which allowed plenty of room for staging the plants with effect, and also for the throngs of visitors to inspect everything satisfactorily. There was also a large circular entrance marquee, which was well filled with several large collections of plants. Eighty-three exhibitors entered the lists, representing 1889 plants, cut flowers, &c.

**PLANTS.**—The silver cup, value £15, presented by Col. Joicey for eight plants in bloom, was deservedly won by Mr. Tudgey, gardener to J. F. G. Williams, Esq., Henwick-Grange. This prize brought out eleven competitors, the number of plants being wisely reduced this year from twenty to eight. The first-prize collection contained *Erica Candolleana*, *E. tricolor* Barnesi, *E. tricolor* speciosa, and *E. mutabilis*, the latter almost scarlet; *Dracophyllum gracile*, *Allamanda nobilis*, *Clerodendron Balfourianum*, and *Anthurium Schertzerianum* with spathes fully 5 inches long. Mr. Noble of Woodburn was placed second, his best specimens being *Genetyllis fuchsoides*, *Clerodendron Balfourianum*, *Erica perspicua nana* (fine but rather faded), and *Dracophyllum gracile*. Mr. Thompson of Ravenside Nurseries, Newcastle, was third, his prominent plant being *Allamanda Schottii*. In the corresponding class of six plants, open to all except nurserymen, there were six competitors. Mr. Tudgey was again first, the prize being £6 and the Banksian medal, his best plants were *Dracophyllum gracile*,

*Pimelea mirabilis*, *Anthurium Schertzerianum*, and *Erica Cavendishiana*; Mr. Hammond, gardener to Sir Wilfrid Lawson, Brayton, near Carlisle, was second with good plants, especially of *Dracophyllum gracile* and *Anthurium Schertzerianum*; Mr. Chertson, gardener to Mr. Hedley West, Chirton House, was third, his notable plant being an excellently flowered *Bougainvillea glabra*. Six competitors.

For eight foliage plants a silver cup, value ten guineas, was given by Col. Joicey. Mr. Hammond was here an excellent first with a splendid *Cycas revoluta* showing fruit; *Croton Veitchii*, *C. Weismanni*, and *C. majesticus* were remarkably fine; *Demonorops fissus*, *Dasyllirion glaucum*, *Kentia Belmoreana*, and *Yucca aloifolia variegata*, all excellent. Mr. Methven, gardener to T. Lange, Esq., Heathfield House, was second. His best plants were *Dicksonia antarctica*, *Cycas revoluta*, a good *Croton*, and *Encopelalartos*. Mr. Noble and Mr. Tudgey were third and fourth. In the class for six foliage plants there were six entries. Mr. Hammond was again first with a splendid *Cocos Weddelliana*, *Phyllotanium Lindenii*, *Crotona Johannis*, undulatus, and *majesticus*, and *Chamserops Fortunei*. Mr. Lazenby, gardener to Mrs. Gurney Pease, Woodside, Darlington, was second, and Mr. Tudgey third; both staged good collections.

**Pelargoniums** were magnificent, and deservedly admired. For nine Show varieties the first prize was £9. This was won by Mr. May of Bedale, Yorkshire, with beautifully trained and well-flowered specimens of *Ruth*, *Prince Leopold*, *Clairibel*, *Floribunda*, *Queen of Whites*, and *Emperor*. Mr. Lazenby of York was second with plants more open and not so profusely flowered; Mr. Robinson, gardener to Mr. Ooshane, Oakfield, being third with much smaller plants, but fresh. For six plants Mr. Sanderson, gardener to Mr. Parker, The Elms, Usworth, was first with fresh and good examples of *Formosa* (splendid); *Rose Celestial*, *Virgin Queen*, *British Tar*, &c.; Mr. Adams, Swalwell, being a close second with good plants.

In the class for six Fancies Mr. May and Mr. Lazenby occupied the same places as before, the latter having much smaller plants; and in the corresponding class for three Fancies Mr. Adams was the only exhibitor, staging fresh but small plants. 147 plants were staged in the above classes, and the display was an imposing one.

**Bedding plants** were very good. Messrs. Lazenby & Sons, York, were first with fine examples of *Geranium Vesuvius*, Mrs. Pollock, and *Violet Hill Nosegay*, *Verbena Purple King*, *Viola Perfection*, &c. Three collections were shown. Alpine plants were also excellent, Mr. Rodwell, North Eastern Cottage, York, being first; the noticeable plants being *Sedum glaucum variegatum*, *Sempervivum Aitoni*, *Sedum spectabile* var., and *Sempervivum arachnoideum*. Mr. Whiting and Mr. Larke followed, the former with *Kleinia repens*, *Sedum reflexum*, and *Echeveria sanguinea* in fine condition.

**FERNS.**—In the class of six exotic Ferns, distinct, there were seven exhibitors. Mr. Tudgey was first, Mr. Hammond and Mr. Noble following in the order named. The first-prize collection contained *Gleichenias Mendellii* and *dichotoma*; *Adiantum canaliculatum*, *gracillimum*, and *tenerum*. Mr. Hammond's group contained fine plants of *Adiantum pedatum*, *Asplenium coriaceum*, a good *Davallia Mooreana*, *Dicksonia antarctica*, &c. Mr. Noble's best plants were *Gleichenia speluncas* and *Adiantum trapeziforme*.

For six British Ferns, distinct, there were four entries. Mr. Noble being first with *Trichomanes radicans*, *Polystichum angulare grandidentis* and *proliferum*, *Lastrea Filix-mas*, *Osmunda regalis cristata*, and *Scolopendrium crispum*. Mr. Rodwell was second with much larger plants, and we think equal as regards varieties.

Roses in pots were not numerous, but one hundred plants sent by Mr. May of Bedale added considerably to the attractions of the Show. Mr. May was the only prizetaker in the class for six Roses, distinct, in pots, with *Capitaine Christy*, *Mons. Etienne Levet*, *Princess Mary of Cambridge*, *Dupuy-Jamain*, *Madame Lacharme*, and *Paul Verdier*.

Only two lots of *Ericas* were shown, and the plants were rather small. There is nothing further to mention among the plants except some good *Fuchsias* from Mr. Forsyth and the table plants, of which eleven lots were shown; Mr. Lazenby being first with fresh medium-sized examples of *Croton Weismanni*, *Aralia leptophylla*, *A. Veitchii*, and *A. Veitchii gracillima*, *Pandanus Veitchii*, and *Dracena gracilis*. Mr. Thompson, gardener to Lindsay Wood, Esq., South Hill, was second with *Dracena Guilfoylei*, *Reidia glaucescens*, *Cocos Weddelliana*, &c. Mr. Whiting was third.

**ROSES.**—For forty-eight Roses, not less than twenty-four varieties, only two competitors entered the lists, Messrs. Cranston and Co. and Mr. May, and for thirty-six the same, and they secured the prizes in the order of their names. Messrs. Cranston's blooms were exceedingly fine and well coloured. Their best flowers were *Prince Camille de Rohan*, *Maurice Bernardin*, *Ferdinand de Lesseps*, *Duke of Edinburgh*, *Général Jacqueminot*, very fine; *Mons. E. I. Teas*, *Horace Vernet*, *Madame E. Levet*, *Auguste Neumann*, *Magna Charta*, *Duchesse de Vallombrosa*, *Mdlle. Marie Cointet*, *Oxonian*, and *Catherine Bell*. Mr. May also staged some fine flowers of *Capitaine Christy*, *Madame Victor Verdier*, *François Michelon*, *Charles Lefebvre*, *Mons. Etienne Levet*, and *Mons. Etienne Dupuy*.

For twelve yellow-Roses Messrs. Mack & Son, Catterick Bridge, were first; for twelve Roses of one sort Messrs. Cranston were first with *Marguerite de St. Amand*. For twelve Tea-scented Roses Messrs. Mack and Cranston secured the prizes, the former staging fine blooms of *Madame Bravy* and *Madame Berard*; the second *Cheshant Hybrid*, *Marie Van Houtte*, and *Devoniensis*.

In the class for thirty-six Roses, open to all except nurserymen and dealers in flowers, Mr. Jowitt, The Old Weir, Hereford, was first for Messrs. Cranston's ten-guinea challenge cup with a fine collection. Mr. Whitwell of Barton Hall was first for twelve Tea-scented Roses in not less than six varieties, the blooms being shown on a black silk velvet ground.

In the open class for twelve bunches of cut-flowers six collections were staged, Mr. Tudgy being first with fine flowers of the choicest stove and greenhouse plants. For six bunches in the corresponding class, nurserymen excluded, there were seven entries, the first prize being again won by Mr. Tudgy; Mr. C. Wass was second with a stand which contained *Pelargoniums* and *Passifloras*, while two of the other stands contained choice flowers of *Lapageria alba*, *Ixoras*, and *Ericas*, and were entirely overlooked. Cut flowers of herbaceous plants were magnificent, nine lots being staged. Mr. Battenaby was first with a very choice collection. Some excellent flowers were also shown amongst the other contributors by Messrs. Spoor, Larke, Lazenby, &c.

Bouquets, eperges, and flower baskets were also largely exhibited. Some were exquisite in taste, whilst others were rather too profuse in colour, the flowers too densely packed and formal, especially amongst the flower baskets. There were altogether 153 bouquets, eperges, &c., shown. There were four competitors for the table decorations, the President of the Society giving a cup valued £10, which was deservedly won by his able gardener Mr. M. Thompson. His table was exceedingly chaste and artistic, the colours well blended, neither too heavy nor too light, and his success was in a great measure due to a judicious draping of the graceful hanging Fern *Lygodium scandens*. The centrepiece was a *Moss* stand flanked by smaller stands, one at each end, with a sufficient number of still smaller glasses all round. The centre stand contained at the base *Eucharis*, *Ixoras*, and other coloured flowers, fringed with *Davallia Mooreana* and *Adiantum trapeziforme*, while lighter flowers were employed at the top. There were two table plants, *Grevillea filicifolia* and *Aralia Veitchii*, and six dishes of fruit. This table was all that could be desired. Messrs. Gallender & Sons were second, and Mr. Methven third.

In the eperges of cut flowers Mr. Oliver was first with a very effective arrangement. In both classes bridal bouquets were shown well, Mr. Lazenby and Mr. Rutherford being respectively first in each class. Hand bouquets, button-holes, &c., were also numerous, Messrs. Rymer, Whiting, Leon, and Jones being successful in their respective classes.

FRUIT, as we have before mentioned, was not of such superior quality as we have seen, yet some excellent dishes were staged. There were only two competitors in the class for six dishes of fruit—Mr. Jowsey, gardener to Ghipin Brown, Esq., Leabury Park, and Mr. Clark, gardener to the Marquis of Ripon, Studley Royal; and the prizes were awarded in the order of their names. Mr. Jowsey's collection included Black Hamburgh and Buckland Sweetwater Grapes, even and well coloured; Grosse Mignonne Peaches, Elvage Nectarines, Brown Ischia Figs, and Read's Scarlet Melons. Mr. Clark's contained Black Hamburgh and Golden Champion Grapes, the latter not ripe but splendid bunches; superior Royal George Peaches, a small Queen Pine, fine Castle Kennedy Figs, and a good Colston Basset Melon. Much diversity of opinion existed as regards the awards, many gardeners thinking they ought to be more than four Judges for a show of such magnitude as the Newcastle Summer Show has now attained. For a collection of four dishes (Pine excluded) Mr. Jowsey and Mr. Westcott were the only competitors, Mr. Jowsey having fine Black Hamburgh and Foster's Seedling Grapes, and Royal George Peaches. Mr. Black Niel of Darlington was first for a Queen Pine, only two fruits being staged. For one fruit tree in pot Mr. Whitcomb of the Red Rose Vineeries, Chester-le-Street, was first with that fine Pear *Bourré de l'Assomption*. He also received a commendation for a collection of fruit containing the Irish Peach Apple, Early Ascot, Crimson Gaule, and Early Alfred Peaches; Lord Napier Nectarine, and Black Imperial Plum.

For four bunches of Grapes not less than two varieties Messrs. Jowsey, Westcott, and Marvin were the prizewinners in the order named. The first had Buckland Sweetwater, Black Hamburgh, Madresfield Court, and Foster's Seedling, all very fine. Mr. Westcott exhibited Waltham Cross, Black Hamburgh, and a small bunch of the Duke of Buccleugh very fine. For two bunches of white Grapes Mr. Clark was first with Golden Champion; Messrs. Marvin & Son were second with the same variety. For two bunches of black Grapes Mr. Hutchinson, gardener to Mr. Hudson, Widdowham Grange, was first with two splendid bunches of Madresfield Court. Mr. Hutchinson only possesses two vineeries, and is also quite a young man, but certainly shows some creditable fruit. Five dishes of Peaches were staged, Mr. Clark,

Studley Royal, was first with magnificent examples and with a very pretty apricot-coloured variety named *Rathripa*. There were also five dishes of Nectarines, Mr. Ellsworth being first with fine examples of *Elvage*. This exhibitor also was first with a dish of Cherries. Mr. Clark exhibited splendid dishes of Dr. Hogg and James Veitch Strawberries.

The remaining classes to be noticed are those of the amateurs who do not keep a professional gardener; their produce upon the whole was very creditable. Mr. Adams showed a splendid *Erica ferruginea*; foliage, flowering plants, and Ferns were also well shown by Messrs. Battenaby, Adams, Gardner, Deighton, Rodwell, Landi, Spoor, Martin, &c.

Several stands of plants not for competition were sent by nurserymen, the entrance marquee being reserved for this purpose. Mr. Watson, nurseryman, Fenham, had a charming collection, including hanging baskets of Ferns, vases suitable for the decoration of balconies, entrance halls, &c. Messrs. Clarke, Carlisle, and Mr. Thompson, Newcastle, exhibited stove plants. Mr. Williams, Upper Holloway, London, had a most charming collection of plants, embracing all the novelties of recent introduction of Palms, Ferns, stove plants, Orchids, &c.: these were much and deservedly admired. Messrs. Stephen Nairn & Sons contributed a fine stand of *Pyrethras*, and Messrs. Dickson & Sons of Chester a fine collection of hardy *Psionies*. Messrs. Dinning & Cooke exhibited their system of hot-water apparatus. Messrs. Harrison, Grey Street, Gardner, Turnbull, and Read, systems of ventilating.

An excellent luncheon was served, the President of the Society, Lindsay Wood, Esq., presiding, who was supported by the Mayor of Newcastle, High Sheriff, and the Mayors of the neighbouring boroughs, the Treasurer, J. Gray, Esq., the Committee, Secretary, and their friends, when a pleasant and agreeable hour was spent after the laborious duties of the morning.

## ROSES IN 1879.

"Do Roses require sunshine to bring them to maturity?" This is a question which I consider most appropriate at the present time, though I am aware that at first sight it may appear to some most absurd. "Do Roses require sun?" I can imagine some severe but somewhat captious critic exclaim; "Do you want bread and meat? Do you require rest and sleep to enable you to live? If you do, then, of course, Roses require sunshine, or else they will not bloom, or, at least, give fine blooms." Now I must own that any time before this season, any year except 1879, I should have been inclined to agree with him, but this year I am disposed to answer my own question with a decided negative. And for this reason, this very excellent and to me most convincing reason, that I have seen finer Roses this year than I ever remember to have seen. An old adage says, "The proof of the pudding is in the eating thereof," and so I would say, The proof of this assertion is thus afforded by the eyes.

Now, in the first place it is necessary to show that Roses this year have up to this time had scarcely any sunshine. I live on the borders of South Devon and Dorset, half of my parish is in one county and half in the other, and I confidently assert that we have not had one hot summer's day yet, and that the nights have really been exceedingly cold. There have been very few nights that I have not had a fire, and the temperature has been more like that of November than of June and July. And yet, as I have said before, I have seen as fine if not finer Roses this year than I have ever seen. "Where?" someone may ask, "At the shows, or at home, or at a friend's house?" I have only been to one show, and that was at the Crystal Palace, and I need not repeat my opinion of that Show.

At home I have at this moment the finest *La France* I ever remember to have seen. But I pin my faith upon what I have seen in a friend's garden, and that friend none other than Mr. Robert N. G. Baker of Heavitree, Exeter. I went on the 8th inst. to Heavitree at his request to help him to stage for the Norwich Rose Show, and although prepared from his success at the shows to see great things, I must own my expectations were more than realised. We staged thirty-six and twenty-four distinct, twelve of Charles Lefebvre and *La France*, six new Roses, and out also two large boxes of spare blooms, and when we had done we left blooms uncut enough to stage for two more large shows. Without exaggeration I may say that we could have shown one hundred blooms of *Marquise de Castellane* and *Ferdinand de Lesseps*. Considering the season it was most wonderful. The whole garden, which is now filled with Roses, was one blaze of colour. I should say that from end to end the garden, is nearly 100 yards long, and this is literally full of Rose trees, no other plant is allowed to grow. The Roses are planted in lines of about forty in a line, each line as a rule containing one variety, so that in staging,



Mr. Baker goes down the line, cuts one bloom for the forty-eight, one for the thirty-six, one for the twenty-four, three for the trebles, and two or three for the spare box. These are brought to the lady whose name is immortalised by the magnificent Rose raised by Mr. Turner, which Mr. Baker has shown so grandly this year. She wires the Rose, another member of the family finds the label and holder, and another places it in the stand according to her directions; so that staging is done in a marvellously short time. We dined at five, began to stage at six, and by eight o'clock all was completed. But a staff of six people were at work, and, as I have said, the Roses were all together.

But to return to the blooms themselves. I have the opinion of the greatest amateur and trade growers to endorse my own when I state that for colour, form, substance, and health these blooms have never been surpassed, and yet they have had scarcely any sunshine. It seems to me, therefore, conclusive that Roses do not require much sunshine. Now, take the opposite case. Let an ardent rosarian visit a large nursery in the first week of July in an ordinary year, when the sun has been shining in his strength for a few days, and what will be the result of his visit? Disappointment, I fearlessly assert. He will probably see thousands of blooms, he will walk through rows of standards and lines of Manettis, and he will look in vain for the grand blooms he expects to find. The sun has taken all the life out of the blooms. He will be unable to distinguish, except by the wood, Dr. Andry from Charles Lefebvre, or Mons. Noman from Marguerite de St. Amand. Depend upon it, what the Rose most wants to show itself off to the best advantage is cool gloomy weather.

But how about wind and rain like we have had these thirteen weeks? Ah! there I grant you is the evil. The Rose suffers dreadfully from violent rain, but still more from rough winds. Whilst we were staging for Norwich the wind was so cold and rough that a great rug was hung up in front of the boxes to protect the blooms as much as possible; and how the flowers did stand such a tempest as we had I do not know. The damage done was plain enough, the broken shoots and frayed flowers here and there plainly showed this; but yet the strength of the plants was so great that the blooms resisted even this drawback, and nobly repaid their owner for his ceaseless care and labour. The next morning I visited Mr. Walter's nursery at Mount Radford, and although he had only a few blooms out, those were finer than I have seen for years.—WYLD SAVAGE.

### THREE GOOD NARCISSUSES.

As the time is coming very near when the annual supply of bulbs will have to be ordered, allow me to call attention to three Narcissuses which may be ordered at the same time, the price of each being only a few shillings per hundred. The first to flower in spring will be the one popularly known as "Butter and Eggs," a double variety of the common Daffodil, and which is catalogued under the name of *Narcissus incomparabilis aurantiacus* fl.-pl. The next is a variety of the same species, *N. incomparabilis sulphureus* fl.-pl., the common name for which is "Codlins and Cream." This is not quite such a good variety as the first mentioned.

The third and latest to flower is the double form of the Pheasant's-eye *Narcissus*, *Narcissus poeticus* fl.-pl. This is without doubt one of the gems amongst hardy flowers, and simply becomes indispensable when once grown. Though these will one and all grow in almost any position, they at the same time thoroughly appreciate good culture in a well-worked piece of ground. "Butter and Eggs" is quite as fine as a Rose when well grown. The bulbs require planting about the end of October.—R. P. BROTHERSTON.

### WORMS, SLUGS, AND TOADS.

IN taking a walk round the kitchen garden one evening last week, and observing how much better the weeds grow than the ordinary crops, my attention was drawn to a toad struggling to make a supper off a large worm. It had half swallowed it, and appeared to experience a difficulty in getting rid of the remainder; but after at least a dozen attempts by alternately putting out its paws to hold it steady so that the delicacy might not be lost when opening its mouth to take another bite, the length was reduced to about an inch. This was stiff, and the quaint look of the toad was an exhibition; the only thing I could compare it to was a close-cropped pug dog with a cigar

in its mouth. At last at one gulp it was gone. This was the first time I ever saw a toad eating worms, or even knew that they ate them. On mentioning it to my kitchen garden foreman he said, "Did you ever know that slugs eat worms? Well," he says, "there is a white slug which does, and when I come across one I will show it you." He has found one today, and I have sent it to you; there may be nothing new about it, but certainly it is new to me. I am sorry for the poor worms; I wish they could eat the slugs, for they are a dreadful pest this season. Unless the crops of Lettuces, Peas, Cauliflowers, and French Beans are continually dusted with lime they are devoured. There is abundance of birds here, but they prefer Strawberries and Cherries to them. I have had some young ducks running about, but they are fancying the Red and White Currants, so they are shut out. I suppose I must adopt the best remedy, and that is catch and kill, but the process is a slow one.—J. G.

[The worm-eating slug is well known to us. It is the *Testacella haliotoides*, and has been plentiful this year in gardens in the western suburbs of London.—EDS.]

### NORWICH ROSE, &c., SHOW.

JULY 9TH AND 10TH.

THIS was a special Exhibition organised by the Norfolk and Norwich Horticultural Society in commemoration of its fiftieth anniversary, and was held under the most adverse circumstances as regards weather in the grounds of A. L. Chamberlain, Esq., Norwich. Notwithstanding the concurrence of six or seven other shows on the same days, and the outlying position of Norwich, a very liberal and well-framed schedule brought a large competition, the leading amateurs from far and near putting in appearance in full force; and Mr. Field, the Hon. Sec., who has evidently the bump of organisation well developed, may be congratulated on the successful issue of his well-directed labours.

So far the Norwich Exhibition may be said to have been the Rose show of the season; and where Canon Hole is judging and Messrs. Paul, Cant, Baker, Jowitt, Curtis, Soames, Fellowes, Nicholls, and a host of rosarians great in name and in deed are competitors, the fact can hardly be gainsaid. Mr. Baker, the "Hercules of the West," never appeared in finer condition, and rarely has his stand of thirty-six single trusses been excelled by amateur or nurseryman.

The Norwich Society offered a ten-guinea champion prize for the most points obtained by a prizewinner in various Rose classes, and this fell to Mr. B. R. Cant of St. John Street Nurseries, Colchester. Mr. Jowitt of Hereford carried off, also by points, the amateur champion prize offered by Messrs. Pegler Brothers, Norwich.

In the nurserymen's class for forty-eight varieties Mr. B. R. Cant was first with grand blooms of Marie Baumann, Madame Nachury, Horace Vernet, Mdlle. E. Verdier, Sir Garnet Wolseley, Madame H. Jamain, Exposition de Brie, François Michelin, John Hopper, Louise Peyronny, Duke of Edinburgh, La France, Abel Carrière, Sophie Coquerelle, Etienne Levet, Baronne de Rothschild, Marie Finger, Mons. E. Y. Teas, Niphetos, Fisher Holmes, Prince Camille de Rohan, Rubens, Madame Bravy, Maurice Bernardin, Princess Beatrice, Camille Bernardin, Maréchal Niel, Général Jacqueminot, Marguerite de St. Amand, Duke of Wellington, Souvenir d'Elise, Hippolyte Jamain, Madame Hunnebell, President, Xavier Olibo, Madame G. Schwartz, Prince Arthur, Etienne Dupuy, Marquise de Castellane, Mons. Noman, Dr. Andry, Pitord, Madame C. Joigneaux, Comtesse de Nadaillac, Victor Verdier, Marie Van Houtte, Charles Lefebvre, and Sultan of Zanzibar. Messrs. Paul & Son, The Old Nurseries, Cheshunt, were second with flowers of remarkable substance and colour but smaller in size. Their stand included good specimens of Duke of Teck (Al), Charles Darwin, Mons. E. Y. Teas, Henri Ledechaux, Mdlle. Eugénie Verdier, François Michelin, Sultan of Zanzibar, Abel Carrière, Marquise de Mortemart, Elie Morel, Duke of Edinburgh, Princess Beatrice, and Devoniansis. Messrs. Ewing & Co. of the Eaton Nurseries, Norwich, obtained the third position. For twenty-four varieties, single trusses, Mr. B. R. Cant and Messrs. Paul & Son took first and second honours in the order named. Mr. F. Cant was third.

In the amateurs' class for thirty-six single trusses Mr. B. N. G. Baker of Heavitree, Exeter, was first, his flowers being of large size, brilliant in colour, of great substance, and very even. A remarkably fine bloom of Mrs. Baker had the post of honour; and in her train followed Madame Lacharme, Jean Soupert, Etienne Levet, Maurice Bernardin, Marie Baumann, Marquise de Castellane, Dupuy-Jamain, Abel Carrière, Mons. E. Y. Teas, and Thomas Mills, all in splendid form and specially noticeable, but Mr. Baker's was not a "tea party," as not a single Tea or Noisette was in the stand. Mr. W. Nicholls, gardener, Drinkstone Park, Bury St. Edmunds, was second, showing some very fine Teas, most notably Niphetos (very large and clean), Alba Rosea, Souvenir d'Elise, Devoniansis,



and Maréchal Niel. Mr. J. L. Curtis of Chatteris was third with very good flowers. In the local amateurs' class for twenty-four varieties, single trusses, Miss Penrice of Wilton House, Norwich, was first, and well sustained her reputation, securing the silver medal offered by the National Rose Association.

In the open classes for twelve blooms of Baronne de Rothschild, La France, Alfred Colomb, Charles Lefebvre, and Maréchal Niel some good flowers were staged, but Maréchal Niel and the yellows were wanting in colour all through the Show. Some good Teas were staged in each class, Mr. Jowitt, who was first in the amateurs' twelve, having Rubens and Niphetos in their best form.

The exhibits of new Roses in the special classes were, as frequently happens, unsatisfactory, most of the exhibitors having staged their best blooms in the general classes. The best recent English-raised varieties, to which I may now safely give at least the proportionate pre-eminence over their continental rivals, were Duke of Teck, extremely brilliant, and the nearest approach yet obtained to a good scarlet Rose; Mrs. Laxton, very symmetrical and well furnished; Charles Darwin, good, and a Rose I can thoroughly recommend for growth and as a free bloomer; Magna Charta, large brilliant Rose; Sultan of Zanzibar, dark but shaded with shelly petals of much substance; Mrs. Baker large, and as shown by Mr. Baker a very striking Rose. Mr. Bennett's Hybrid Tea Duke of Connaught is very bright in colour, and will probably prove an acquisition as a show Rose; and if I mistake not, Mr. Cant's Prince Arthur, a good Rose which was so modestly and economically sent out, will yet be found in many winning stands, and in quarters where it has not yet been tried. Amongst the new continental varieties those which showed best at Norwich were A. K. Williams, a more replete Horace Vernet; Boildieu, a remarkably bold and vigorous growing Rose, and as shown by Mr. Curtis an improvement even on Marquise de Castellane; Mons. E. Y. Teas, very well formed and bright in colour; Jean Souper and Abel Carrière, both good darks with plenty of substance.

Roses were generally fine and in good colour at this Exhibition, notwithstanding the continued sunless, watery, and boisterous weather they must have experienced; and should a reasonable amount of sunshine and increase of temperature intervene, good blooms may be anticipated at Birmingham on the 24th inst.

In the class for new or rare plants, although large prizes were offered there was nothing calling for special remark, as practically there was no competition. Some good exotic Ferns came from Mr. Trevor, and the Marchioness of Lothian and Mrs. Burroughes showed fine specimens of *Cycas circinalis* and *Adiantum gracillimum*.

Messrs. Daniels Brothers had some excellent Zonal Pelargoniums both in pots and as cut flowers. The variety Mrs. Turner had immense trusses of a distinct purplish-rose colour standing well above the foliage. In the cut blooms Ellen, Mrs. Findlay, Apple Blossom, Mrs. Lankester, and Dreadnought were the most attractive. Messrs. Daniels also showed some good seedling and named varieties of *Colons*, and a first-class certificate was awarded them for D. T. Fish, brightly variegated carmine and yellow, and a decided advance in those shades. Messrs. Ewing & Co. and Messrs. Bell also sent important collections of shrubs and plants not for competition.

Fruit, considering the season, was good. For the collection of eight varieties Mr. G. T. Miles of Wycombe Abbey Gardens was first. He had a very good Smooth Cayenne Pine, well-finished Black Hamburg and Buckland Sweetwater Grapes, Bellegarde Peaches, Murray Nectarines, Golden Gem Melon, Brown Turkey Figs, and Elton Cherries; Mr. Coleman of Eastnor Castle Gardens being second. For the collection of six varieties, Pine Apples excluded, Mr. Coleman was first, Lord Suffield second. Grapes as might be expected were not well coloured nor ripened. For three bunches of Black Mr. Coleman was first, Lord Suffield second, and E. Miller Mundy, Esq., Shipley Hall, Derbyshire, third. For three bunches of White Mr. Mundy was first, the Rev. H. Musket second, and Mr. Miles third, Mr. Mundy being also first for the single bunches. Melons were good, Mr. Coleman being first both the green and scarlet-fleshed varieties.

For the collection of vegetables, eight varieties, Mr. Miles was first, showing Nantes Horn Carrots, Stamfordian Tomato, and William I. Pea very fine. The best single dish of Potatoes was shown by Capt. Cattling of Wisbech, the variety being Rivers' Royal Ashleaf in the finest possible condition. He also showed a pebble-shaped variety called Swan's Egg, very smooth and clean. For thirty-six pods of Peas both the first and second prizes were awarded for William I., nearly all the late varieties being wanting. Lord Suffield was first and Mr. W. Bae second. This was altogether a good Show and well managed.—T. LAXTON, Bedford.

### ROCKERY PLANTS.

I AM glad to see "D., Deal," speaks so highly of *Ramondia pyrenaica* in his article on herbaceous plants in your number for June 26th. If he has no greater favourite amongst [his] alpine plants, I venture to say that all who have tried it on a rockery will agree with him. It is easily grown, exceedingly

hardy, for the intense cold of last winter did it no harm, and it is wonderfully prolific in flowers. I have it growing on a partially shaded spot, the shade being afforded by a deciduous tree, so that in winter it has the full sun. When it starts into growth in spring it is almost impossible to give it too much water. The foliage is peculiar, thick, leathery, and heavily creased. The lovely pure grey flowers, something resembling those of the Potato, spring up from under the foliage, and they are very conspicuous.

I find that *Sedum Sieboldi variegatum* is another perfectly hardy plant, and very beautiful on the rockery. One advantage of the great cold and unusual length of last winter is, that we now know what things will stand our climate, for we are not likely to have a more severe test of what a plant can bear than the winter of 1878-9. This *Sedum* acquires the full beauty of its variegation only under the full blaze of the sun. Unfortunately slugs are very fond of it, and unless carefully looked after will speedily destroy its beauty.

The red Christmas Rose (*Helleborus abchasicus*), is a fine plant for early spring. It flowered late but very well this year, and I have been successful in saving a good deal of seed. The pods are handsome, and ripen about the middle of June. The whole plant is exceedingly graceful, much more so than the common Christmas Rose, which, however, is invaluable on account of the season in which it flowers.

*Soldanella alpina* is an old favourite with me. It grows well in peat in a shady corner. I remember it many years ago grown as an edging to the beds in an "Italian garden" at Menabilly, Cornwall. It has entirely disappeared from there now, and no trace of the pretty little alpine can be found. "D., Deal," speaks of its "minute fringed flowers," but it deserves in reality a higher place. The fringed flowers are small certainly, but still conspicuous, and very lovely on close inspection. I hope to save seed from it this year, but it is not yet ripe.

*Sanguinaria canadensis* is a curious plant, sending up its white flowers very early in spring, and shortly afterwards the leaves appear. The whole plant dies down in summer and is easily lost. The same thing may be said of the blue *Anemone apennina*. It comes up with fine foliage, and its beautiful blue flowers open gloriously to the spring sunshine as if enjoying the return of warmer and brighter weather, but then the whole plant speedily disappears and may easily be rooted up during summer operations in the rockery.

*Trillium grandiflorum* has made efforts to grow, but somehow the efforts have failed with me hitherto. I have it in a damp shady corner, but I am afraid it will not succeed. It is expensive for some reason at the present time.

There are few things on the rockery more delightful than the *Daphne cneorum*. Its creeping stems must be covered as they grow, and then the plant will do well and amply reward any pains that are taken with it. Its shrubby foliage is very pretty, and the flowers deliciously sweet and showy, and they come in spring. Sweet-scented flowers are not common in the early months, and therefore this *Daphne* is all the more precious. The Cheddar Pink (*Dianthus cassinus*) is very pretty but almost too short-lived, and slugs will find it out if they can. It will grow on a dry open part of the rockery bed, but will succeed almost anywhere. This and the *Sanguinaria* can be protected by zinc collars from the depredations of their great enemy the slug; but the protection is an ugly one, and it half spoils a rockery to see it dotted with such unsightly protectors. I use it round very precious things which I am trying for the first time because it is safe, and, so far as my experience goes, a certain protection.—A GLOUCESTERSHIRE PARSON.

### NOTES AND GLEANINGS.

SIR HENRY W. PEEK, Bart., M.P., has done a kind act to the inhabitants of the metropolis by the part he has taken in securing the delightful retreat of BURNHAM BEACHES to the public for ever. The City Lands Committee recommended the purchase, under the powers of the Open Spaces Act, 1878, of the open and waste lands referred to, the purchase money to be paid out of the grain duty fund. The price of the property was fixed at £12,000, independent of the timber, valued at £6000. Of this land 175 acres are freehold, enclosed, and 374 acres open. The Corporation had no power to purchase enclosed land out of the grain duty. As soon as it became known that the Corporation had the purchase in contemplation certain persons endeavoured to make money out of

the transaction, and the consequence was that the open space could not be purchased without the enclosed land. In the difficulty Sir Henry Peek came forward and offered to make the purchase, and sell to the Corporation the open space at £6000, or £16 per acre, Sir Henry for the enclosed 175 acres, paying £35 per acre, and thus the difficulty was surmounted and the land secured.

— THE AERIDES HOUSE at MESSRS. VEITCH'S NURSERY AT CHELSEA is now extremely attractive, the fine stock of healthy plants flowering with great freedom. *A. odoratum* is represented by many fine spikes and varieties, and *A. Lobbi* is in great beauty. The extremely bright *Dendrobium suavisimum* is also in bloom, and *D. moschatum* has remarkably fine flowers. *Cattleya Mendeli* and *Laelia purpurata* also command attention, and *Phalenopsis grandiflora aurea* is splendid. The Orchids out of flower are as usual in admirable condition, and not the least interesting amongst them is a fine collection of the remarkable *Angraecum sesquipedale* which recently arrived in excellent condition, the finest importation that has ever been seen in this country. Tuberous Begonias are also in full beauty; the collection is very large, and contains none but superior varieties. Some distinct new varieties are unsurpassed for richness of colouring, and a large double variety, *Veitchii*, has flowers of unusual size and form. The charming miniature *B. Davisii* is not only beautiful in itself but is proving a valuable parent, some of the newer seedlings combining elegance of habit with extreme floriferousness and brilliant colour. The plants are grown cool, and tell by their excellent condition that these Begonias do not require anything like the amount of heat to which they are often subjected in private collections. Amongst other plants in the cool house devoted to insectivorous plants, the fine hybrid *Sarracenia Chelsoni* is luxuriating; it is very distinct, and free.

— WE recently had an opportunity of observing a striking instance of the stimulating effects of NITRATE OF SODA on garden crops. Mr. Baker, the successful gardener at Coombe Cottage, Kingston-on-Thames, has used this fertiliser somewhat extensively this year, both in the garden and on the home farm belonging to Mr. E. C. Baring. As the nitrate has not been applied to every portion of the crops in the garden its effects show with greater clearness. Those portions that have been dressed are extremely luxuriant, and the observer can "tell to an inch" how far the dressing has gone. We have not seen such Cauliflowers this year as those in the garden referred to; and Peas, Potatoes, indeed all crops to which the nitrate has been applied, are in remarkable health and colour. The same marked effects of the nitrate are discernible on the farm. The quantity applied both to farm and garden crops by Mr. Baker was at the rate 1½ cwt. per acre.

— THE EVENING FETE IN THE GARDENS OF THE ROYAL HORTICULTURAL SOCIETY last week was a very successful one. Besides the electric light, of which several were provided in the gardens, conservatory, and exhibition tents, the gardens were also rendered beautiful by many thousands of coloured lamps employed in festoons by the sides of the walks and suspended from the trees, and the grounds were further illuminated at intervals with coloured fire. Notwithstanding the rain, which fell rather freely at the opening hour, a large and brilliant company assembled. Flowers, vocal and instrumental music, scientific appliances of various kinds, botanical curiosities from the museum of Messrs. Veitch & Sons, and a collection of beautiful miniature plants from the establishment of Mr. Bull, afforded interest and pleasure to the numerous visitors. The entire arrangements were admirably carried out, and gave great and general satisfaction.

— IN reply to a question put by Lord Enfield in the House of Lords on Thursday last, Earl Granville stated that it was perfectly true that Her Majesty's Commissioners for the Exhibition of 1881 had commenced a SUIT IN CHANCERY AGAINST THE ROYAL HORTICULTURAL SOCIETY in order to recover possession of the Gardens at South Kensington; but the Commissioners of the Great Exhibition never had been and never could be under any liability to pay the debentures of the Royal Horticultural Society, and, that being so, they did not propose to make any compensation. The Chancellor of the Exchequer gave a similar reply to Mr. R. Yorke in the House of Commons.

— THE WOLVERHAMPTON TOWN COUNCIL recently advertised for plans for laying out 47 acres of land near that town as a public park. Twenty-seven designs were sent in,

the one to which the principal prize (£50) has been awarded being from Mr. R. H. Vertegans, Chad Valley Nurseries, Birmingham. Mr. Vertegans has been engaged to carry out his design at a cost of £5000. It provides for spaces to be devoted to cricket, archery, croquet, and other outdoor games, a drill ground for the volunteers, and a lake covering a space of about nine acres. Some twenty thousand trees and shrubs are to be used in planting the grounds; and arrangements will be made for shelter, refreshment rooms, &c. Outside the fence of the park, and encircling it, there will be a spacious drive for carriages, &c.

— IN MR. BULL'S NURSERY AT CHELSEA is an extensive and striking collection of *Hæmanthus Kalbreyeri* now flowering, the great mass of brilliant heads producing a gorgeous effect. One of the heads measures 2 feet in circumference, perhaps the finest example that has yet been seen of this brilliant plant. Some fine spikes of *Odontoglossum Alexandræ* attract notice, and especially so the glowing *Oncidium macranthum hastiferum*, the flowers of which are extremely fine and the colours very bright. Some new *Sarracenias* of large size and rich colours also arrest attention. They will be heard of again, being both distinct and beautiful. The new *Coleuses* are being "propagated off their legs" to meet the demand for them, which suggests that *Coleuses* are rather coming in than going out of fashion. As an instance of what may almost be termed a curiosity in the trade in plants, large cases branded for Africa were being packed with stove plants to be transmitted forthwith.

— LORD LONDSEBOROUGH'S GARDEN AT NOBBITON is justly famed for the fine collection of Orchids that it contains, and for the immense number of plants that are grown for room decoration, the number not infrequently amounting to a thousand dozens a week; yet more striking even than the departments alluded to at the present time are the grand crops of Grapes now hanging in the principal range of glass devoted to Vine culture. This range is 250 feet long, and wide and lofty in proportion, and except two divisions from which the Grapes have been cut, one of Black Hamburgs and the other of Muscats (ripe at the end of May), the entire length is occupied with Vines and crops of which the cultivator, Mr. Denning, has great reason to be proud. For uniformity of size of bunches, and their fullness, and for regularity of berries, the crop throughout the range is equally remarkable. The bunches range from 2 to 3 lbs. in weight, the latter being the maximum weight suitable for packing and sending the fruit long distances; if heavier the Grapes are apt to be crushed in transit. The bunches have been thinned also for travelling—that is, the berries are just wedged sufficiently that they cannot be displaced by any ordinary shaking. The Vines which were started in January are wholly in outside borders, which have never been covered with fermenting material, and it is not conceivable that their condition and crop could be improved by any such application. Top-dressings of rich manure are given, which afford some protection to the roots and invigorate the Vines at the same time. The laterals are not stopped at the conventional one or two leaves beyond the bunch, but wherever a leaf can have free unobstructed light there it is permitted to expand, and thus the roof is covered with foliage, and yet there is no overcrowding.

— AT the Exhibition of the PELARGONIUM SOCIETY the following certificates were awarded after our reporter left the Exhibition. Show and large-flowered varieties:—The Baron (Foster), a fine flower, rose-salmon lower petals, dark upper petals, and white throat. Fireball (Foster), rich salmon tinged with orange, extremely bright; upper petals darker in colour; a handsome variety. Flag Captain (Foster), lower petals pink with dark veins, upper petals large and dark. Sensation (Foster), lower petals rose-pink, with dark veins and blotches; throat white, upper petals dark; excellent. Alice (Foster), lower petals light pink, throat white, and upper petals very dark. The Pope (Foster), lower petals pinkish violet, upper petals dark, large, throat white; a very bold flower. Charlotte (Matthews), a very soft reddish tinge, neat flower; Joe (Matthews) lower petals bright pink, upper petals dark, white centre, large and good; plant floriferous. Fancy varieties:—Sarah Bernhardt (Turner), rose faintly tinged with violet, throat white, and white margin to upper petals; very attractive. Electric Light (Turner), pale violet rose, white throat, very good. Zonal varieties.—Leander (Denny), warm bright scarlet-cerise; excellent substance. Huratio (Denny), fine flower, dark cherry tint, large truss. Dadu (Denny),

light scarlet, dense truss. *Commander-in-Chief* (Denny), brilliant scarlet, very free and showy. *Allegro* (Denny), very deep pink. *Romeo* (Denny), rich scarlet, very large truss. *Little Smith* (Catlin), rich deep rose, very good. *Edgar Catlin* (Catlin), excellent scarlet, fine flower, and large truss. *Fanny Horpe* (Catlin), salmon with bright orange centre; good form both in flower and truss. Double Zonal varieties:—*Pioneer Denny*, bright scarlet cerise. *Dauntless* (Denny), deep scarlet, very showy. Decorative varieties:—*Mdlle. André* (Jackson), lower petals flushed with pink, upper petals light orange red; lower fringed and pleasing. *Black Prince* (Hayes), maroon, pale margin; free and good. *Princess of Wales* (Hayes), lowers large but good, white veined with rose tint, throat white.

— We are informed that the *LEAK ROSE SHOW* has been postponed until the 22nd inst. in consequence of the lateness of the Roses in the district.

— We have received from Mr. J. Carter, Keighley, a BOX OF ROSES—the Burgundy Rose and Rose de Meaux. "They were," writes Mr. Carter, "favourites of mine when a boy fifty years ago, and I have grown them since that time. The *Meaux* is now covered with buds, and every plant will soon be very pretty." These are very enjoyable Roses, and are especially suitable for borders and for yielding a profusion of fragrant blooms and pretty buds.

— RELATIVE to the publication of a rumour that the CURATORSHIP at Kew had been offered (it was not stated by whom) to a gardener in Scotland, Mr. Smith, the present able curator, informs us that he has no knowledge of any change of the nature indicated, nor has, we are informed, Sir Joseph Hooker.

— We recently noticed in MESSRS. CARTER & Co's nursery at Forest Hill a batch of seedling Gloxinias, many of which were unusually good both in form of flower and colour. This was especially noticeable in the shades of blue and purple, some being extremely rich and clear. *Lapageria alba* was bearing several fine flowers. That curious *Asclepiadaceous* plant *Ceropegia elegans* was also flowering, and judging by the large stock of young plants there must be a good demand for it. In the grounds some excellent Pansies were in flower, one of which we observed was a true black with a light eye.

— THE following ORCHIDS are now flowering in the house devoted to them at Kew:—*Oncidium ampliatum* has an inflorescence 4 to 5 feet in length, thickly clothed with pale yellow flowers. *Dendrobium McArthurii*, a native of Ceylon, is a fine species. The sepals and petals are of a pale purple tint; the labellum is small, of a similar colour, but marked in the centre with rich deep purple. *Epidendrum radiatum* is a curious Mexican Orchid; the sepals and petals are pale whitish green, the labellum white, with fine dark lines radiating from the centre to the margin. *Hartwegia purpurea* is pretty with its rosy flowers, and *Dendrobium Pierardi* is flowering well. *Dendrobium calceolus* is bearing two fine spikes of cinnamon-coloured flowers. The epiphytal *Brassavola venosa* has small pale yellow flowers with a white labellum, and the charming little *Mesaspindium sanguineum* has several spikes of rosy lowers.

### ROSE ELECTION.

As arranged, or rather suggested, last year, I propose to make the Rose election for 1879 in two portions. Firstly, then, the newer varieties of the Rose as looked at in an exhibition light, and secondly as garden Roses.

The first question, then, will stand thus—Name the best thirty-six exhibition Roses introduced since 1871, distinguishing the best twelve and the second best twelve in any way that makes it plain how they stand. I think that none but nurserymen and large amateur exhibitors should reply to this.

For garden varieties, name the thirty best garden Roses, marking the best ten and the second best ten. To this query I shall be pleased to have replies from all quarters.—JOSEPH HINTON, *Warminster*.

### HEATHS AND HARDWOODED PLANTS IN SUMMER.

A few remarks on these plants may possibly be useful to some readers of the Journal, as success in a great measure depends upon the treatment now afforded. Plants of *Erica Cavendishiana* that have flowered should at once be carefully looked over, and all the old blooms must be removed. Keep

the plants indoors for a month or until some growth has been made, when they may be placed outside for a few weeks to solidify the growth. *E. depressa* must, however, be placed when the plants have done flowering in a sunny situation outdoors; also plants of this species which have not flowered this season would be better if placed out where they will have the benefit of all the sun and air possible. These two species do not usually flower well two years following, as from their free and prolonged flowering there is not enough time afterwards for the growth to ripen for the ensuing season. The early-flowering Heaths and such as were potted early will since have made good growth, and may now be placed in the open air to thoroughly ripen the wood. In removing the general stock of Heaths to the open air it is well to place them for a few days at the north side of a wall or shelter them from the direct rays of the sun under a temporary awning, as when the sun is very powerful it causes the leaves to turn brown. The pots must be protected on the side towards the sun by canvas or matting, or the roots in contact with the sides of the pots will be injured. The general stock of young Heaths that were potted early in the season will be making free growth, and must receive attention in stopping and tying out so as to secure well-furnished symmetrical specimens. The general stock of young hardwooded plants will require similar treatment, training them before the shoots get too strong to bend without injury. Aphides are often troublesome on young *Leschenaultias* and *Aphelaxes*. The best plan is to dip the plants in tobacco water, as the insects are difficult to destroy by tobacco smoke except that be applied in such doses as to injure the plants. All hardwooded plants outdoors must be placed on a good thickness of ashes so as to exclude worms, but be careful to keep the ashes constantly moist. When the plants are outdoors they will in dry weather require more water than when under glass, and in very hot weather a slight shade at midday will be beneficial.—G. A. G.

### OLD ROSES.

HAVING seen in the last two numbers of the *Journal of Horticulture* that some of your correspondents are interested in hearing about the Old Yellow Rose, I write to say that I have a plant of it in my garden, which is a very old one. When I first came here, more than thirty years ago, there was an old plant of Yellow Rose, which must have been 6 feet high, against an old wall overhung by Yew trees. Most years it flowered very profusely, but not many of the Roses were quite perfect in colour, some being a dull dirty yellow and some quite green. They were very double, and did not open well, like some of the old Cabbage Roses. This tree died, but I have a sucker from it which has not yet flowered, I think owing to its being in a bad situation against the house, and I intend having it moved. I may add that I know the old double yellow Rose well, as quite distinct from the more modern yellow Briars, which I also have. It is more like the old white Rose, which I have heard called Needham Rose or White Provence, only yellow. I have also the old Blush Damask, some white with pink streaks, and here and there a pink petal; the old Portland, Tuscan, and a deep red Rose apparently of the Damask tribe, which I have been told is called the *Pæstum* Rose. The latter I brought from the north of Aberdeenshire. All the new kinds of Roses flourish particularly well in this garden, and the flowers attain a size I never saw surpassed; but I have been always anxious to keep up the old sorts, including old Cabbage, Blush, and Moss Roses, though called by my late gardener "rubbish."—M. G., *Isle of Wight*.

[You are a better judge of Roses than your late gardener.—Eds.]

### BOMAREA CARDERI.

"THIS plant," writes a Kew correspondent, "commends itself to our notice by several valuable and excellent qualities, which are now beginning to be appreciated by plant-growers, and most deservedly; for, unlike many newly introduced plants, its merits have been found to increase since it first appeared before the public. Several species of *Bomarea* have been known in this country for a considerable time—that is to say, during the present century; for the first to be introduced was *B. Salsilla*, which was brought from South America in 1806. Since that date about a dozen species and varieties have been introduced possessing various degrees of merit; but they have all been eclipsed by *B. Carderi*, which was found

by one of Mr. Bull's collectors in New Grenada a few years ago. This species is a twining plant with purple stems and bright green leaves, the petioles of which have a peculiar twist which reverses the normal position of the blade. The flowers are

borne in large, loose, umbel-like pendulous cymes, and each flower has a pedicel several inches in length. The perianth is in six divisions, three inner and three outer; the latter are of a bright rosy pink colour, spotted near the apex with purplish



Fig. 5.—*BOMAREA CARDERI*.

brown; the former are lighter in colour, with somewhat of a greenish tinge, and are also thickly spotted.

"The plant is very floriferous and easily cultivated, and of rapid growth, which are no ordinary qualities. It requires a shallow soil of loam and sand, and the temperature of an intermediate house; but it will, no doubt, succeed in a greenhouse. There is a specimen planted out in the cool end of the

Succulent house at Kew, which does admirably trained up a trellis, and is now flowering freely, although the temperature is but little above that of a greenhouse, except during the winter. This species may be grown in a pot or planted out; but it seems to thrive better under the latter condition, and very beautiful it is on a trellis when bearing numerous large heads of lovely rosy flowers. The long pedicels of the flowers



render the plant highly serviceable, as affording a supply of cut blooms which can readily be employed for a variety of purposes with great advantage. We may sum up its merits in a few words by saying that it is a really useful addition to our list of plants, and it is no doubt destined to obtain a permanent place in the horticultural world."

[We are indebted to Mr. W. Bull for the annexed engraving.]

### THE LATE NATIONAL ROSE SHOW.

IN order to prevent misapprehension as to the way in which the affairs of the National Rose Society are conducted, and with this object alone, I beg to assure your readers that "WYLD SAVAGE" was altogether incorrect in stating in his remarks last week on the late National Rose Show that my brother Secretary, the Rev. H. H. D'Ombrian, was solely responsible for the non-postponement of our recent Crystal Palace Exhibition. In proof of this it will be sufficient to inform them, that at a meeting of the General Committee of the Society held on the 10th June last, it was decided that such a postponement would be inadvisable.—E. M., *Croydon*.

### PROVINCIAL SHOWS.

#### WIMBLEDON HORTICULTURAL SOCIETY.—JULY 9TH.

As the present season has proved such an unusually late one this Society acted wisely by choosing a day for holding their Show nearly a fortnight later than it is their usual custom to do, and they were also fortunate in having the extensive and well-kept grounds of Belvidere House, the residence of A. Schlusser, Esq., placed at their disposal. The Show was a good one, and well represented the horticultural capacities of the district. The cottagers also availed themselves of the several classes allotted to them, and brought collections of vegetables, fruit, and flowers. Messrs. Veitch & Sons staged an extensive group of new and rare plants, as also did Mr. Thomson of Wimbledon, and Mr. Laing, Forest Hill, a group of Tuberous Begonias.

P. F. Sutton, Esq., Gibbon Road, Kingston, won the premier prize in the class for six stove and greenhouse plants with very even, neat, and profusely flowered plants. Mr. Moorman, gardener to Miss Christy, Kingston, was a very good second. Mr. Bentley, gardener to Sir Thomas Gabriel, was awarded the third prize. In the corresponding class for four plants the honours fell to Mr. Stratton, gardener to Miss Forbes, Chester House, Wimbledon. Mr. Bridges, gardener to F. B. Thomas, Esq., Wimbledon, and Mr. Law, gardener to R. S. Dean, Esq., in the order of their names. The best exotic Ferns were exhibited by Mr. Bridges, Mr. Bentley, Mr. Moorman, and Mr. Stratton. Mr. Bentley and Mr. Law shared the honours for Lycopodiums. In Fuchsias there was a marked falling-off in numbers over past years. Mr. Stratton staged the only six plants, a very creditable collection, to which the first prize was deservedly awarded, and Mr. Law was placed first for three plants. Zonal Pelargoniums are always well represented at this Show. Several exhibitors staged collections remarkably well finished. In the class for six plants in 9-inch pots Messrs. Bentley, Law, and Stratton were placed first, second, and third respectively; and in the class for twelve plants in 6-inch pots Mr. Bridges, Mr. Bentley, and Mr. Law all exhibited good collections, and were very close for first, second, and third positions, which were awarded in the order of their names. Other successful exhibitors of Zonals were Mr. Elliott, gardener to Rev. J. Brackenbury, Mr. J. Callard, gardener to S. Howard, Esq., and Mr. W. Mayes, gardener to E. Holroyd, Esq.

Very seldom indeed have we seen *Colusenes* staged so well before; as exhibited here by Messrs. Callard, Elliott, and Bridges they were truly beautiful. Table plants are always neatly shown here, Messrs. Callard, Bridges, Bentley, and Law coming in this year for the lion's share of the prizes.

**ROSES.**—These were well and numerously exhibited. The best blooms in the Show were undoubtedly those exhibited by W. Scott, Esq., the Treasurer of the National Rose Society, who was awarded the first prize for twenty-four distinct in the amateurs' class and first prize for three blooms in a special class. Amongst the best of Mr. Scott's blooms were *François Michelin*, *Charles Lefebvre*, *Dupuy-Jamain*, *Marquise de Castellane*, *Madame Willermoz*, and *Jean Chérpin*. For twenty-four blooms, distinct, in the open class Mr. Moorman was far ahead of his competitors with a very fresh and even collection. This is the seventh year in succession that Mr. Moorman has won the premier prize in this class. Mr. Gibson, gardener to J. Wormald, Esq., was placed second, and Mr. Elliott third. Mr. W. Marchant was first for twelve cut Roses, and Mr. Mayes for six in the open classes.

The amateurs' collections besides Mr. Scott's were very creditable; especially so were those from Dr. Bookless and J. E. Coleby, Esq., in the twelve distinct, and Messrs. Dixey & Saunders in the six. Dr. Bookless also obtained the premier prize for a single bloom

with a grand bloom of *Marquise de Castellane*, and Messrs. Coleby and Dixey were second and third respectively in the special class for three.

Vegetables, considering the season, were well shown. Mr. Moorman was first for a collection of twelve varieties, and Mr. Bridges for six. The cottagers we have already said exhibited well, especially Messrs. Callaway, Povey, Lunn, and Forder. Mr. Lyne did not exhibit for competition, but staged splendid collections of *Gloxinias*, *Zonal Pelargoniums*, &c., interspersed with Ferns.

#### HIGHGATE HORTICULTURAL SOCIETY.

THE annual Exhibition of this Society was held on Tuesday last in the grounds of Fairseat House, by kind permission of the proprietor and President of the Society, Sir S. H. Waterlow, Bart., M.P., and it proved to be the best in a horticultural point of view that has yet been held. The exhibits were numerous for a suburban Show, and many were highly meritorious; this was particularly the case with the foliage plants, which chiefly occupied the central portion of a long tent. Among these the collections of six were noticeable for their good finish, and Mr. H. Hughes, gardener to H. J. Adams, Esq., Chase Park, Enfield, occupied the premier position with good specimens of *Alocasia metallica*, *Yucca aloifolia variegata*, and *Croton pictus*. Mr. B. Highgate, gardener to E. Brooke, Esq., Caen Wood Towers, followed with good plants, *Alocasia macrorrhiza variegata* being remarkably vigorous. The President's prize for six Palms was also well contested by Mr. Ayling, gardener to S. Cuming, Esq., Hornsey Lane; Mr. Nunn, gardener to the donor of the prize; and Mr. B. Highgate; and the prizes were awarded in the order named.

There were some good competitors for the prize offered by the worthy Treasurer, Mr. Cutbush, for six *Adiantums*; and in the premier collection from Mr. Ayling we observed an extraordinarily fine *A. formosum* over 4 feet in diameter, vigorous and healthy. Mr. Catlin, gardener to Mrs. Lermite, Finchley, sent an even and bright collection of six *Zonal Pelargoniums*, of which Ellen and Mrs. Catlin were excellent both in flower and growth. This was most deservedly awarded the first prize, for it was greatly superior to the other collections.

Among miscellaneous plants we remarked six fine *Cockscombs* from Mr. H. Kent, gardener to J. Lane, Esq., The Grove, Highgate, which had been extremely well grown. They were in somewhat large pots it is true, but that was their chief defect, for the heads were of great size and richly coloured, and the plants very dwarf with good and healthy foliage. The premier award was easily obtained.

In addition to numerous collections of *Fuchsias*, *Gloxinias*, *Pelargoniums*, *Calceolarias*, &c., Mr. B. S. Williams of Upper Holloway, and Messrs. Cutbush & Sons of Highgate, both great supporters of the Society, very generously exhibited handsome groups of plants. Mr. Williams had two groups, one chiefly composed of Palms, Orchids, and foliage plants, in the centre of which was a neat specimen of *Croton Diarrei*. Another included a number of new and choice plants, including the bright new *Colusenes*, *Exquisite*, *Kentish Fire*, *Lord Falmouth*, and *Lord Oxford*, and the distinct and attractive *Croton camptophyllus*, with narrow twisted leaves marked with yellow and green. Messrs. Cutbush's group, a very excellent one, was arranged at the opposite end of the tent, and was formed chiefly of greenhouse, flowering, and foliage plants, and in front were nine boxes of cut Roses, which were remarkably fresh in colour, and several were particularly good; for instance, the varieties *La France*, *Marie Baumann*, *Ferdinand de Lesseps*, *Beauty of Waltham*, and *Marguerite de St. Amand*.

Fruit was scarce and in indifferent condition, and vegetables were not very numerous but the quality was fair. The cottagers' productions were arranged in a smaller tent, and comprised miscellaneous collections of plants, vegetables, fruits, and model gardens, several of the latter being tastefully designed. The weather continued fair during the afternoon, and many visitors assembled to enjoy the Flower Show, the music, and the extensive views which the elevated position of the gardens afforded. The experience of Mr. Cutbush, sen., was of great value in the arrangements of the Show, and the success of the Society, of which he was a principal founder years ago, is in no small measure due to the unwavering support he has accorded to it for many years past.

#### REIGATE ROSE SHOW.

MOST travellers by the South-Eastern Railway to Reading from Redhill have probably fallen into the same error that I had done, and imagined that the rapid and mushroom-like increase of that town was simply an outgrowth of a larger place of a similar character, the portion of Reigate town adjoining the station of that ilk fully bearing out the notion. Let me dispel their ignorance as pleasantly as mine was, and say that Reigate is a most charmingly situated country town, nestling amongst the hills of that most lovely valley of the Mole, surrounded by ample foliage, full of

historic reminiscences, and altogether worthy of a more lengthened visit than I was enabled to pay it. The Castle has been very wisely rescued from the fate that has befallen many of our ancient monuments, and the grounds have been connected into a public garden, the keep being an attractive Rose garden, and the whole under the care of an intelligent gardener who takes a pride in his work. Well, in this good town of Reigate there has existed for some years a very pleasant Rose Society or Club of a similar character to that at Brookham to which I alluded last year. The members do not compete for money, but the prizes are given in various articles of *virtu* selected beforehand. There is indeed one class open to amateurs not members where money is given, but this is the only one. Nurserymen do not compete. The exhibition is held in private grounds, and this year was held in the very beautiful grounds of Mr. Waterton at Great Doods; and having been asked to officiate as Judge it was my pleasure to enjoy a very delightful day, although, as in almost all days in this strange season, we had a proportion of moisture.

The Exhibition was held in two tents, the greater portion of one being occupied by table decorations, bouquets, and the various articles to be given in prizes, and the other with Roses. These were in excellent condition, and some of the boxes were very fine, notably the twelve exhibited by the Rev. Alan Cheales, so well known to the readers of the Journal by his pleasant and chatty papers ("A. C."), and was a box of which its owner might well be proud, for it obtained for him four prizes. It was first in its class, first also as the best box in the Show; and two of the Roses obtained both the medals of the National Rose Society. It contained Dr. Andry, Duke of Edinburgh, Beauty of Westerham (this is a very little known Rose, but an excellent one raised by Mr. Cattell of Westerham from Général Jacqueminot but more double; it obtained (as proof of its excellence) the silver medal as the best Hybrid Perpetual in the Exhibition); Countess of Oxford, Marie Baumann, Souvenir d'Elise, the best Tea in the Show; Charles Lefebvre, Dupuy-Jamain, La France, very fine; Souvenir d'un Ami, and Alfred Colomb. In the box for twenty-four, open to all comers, the first prize was taken by Mr. Brown, gardener to Mr. Waterton, for an excellent stand, amongst them some very fine flowers, especially Mons. E. Y. Teas, Alba Rosea, Souvenir d'un Ami, Marquise de Castellane, Henri Ledechaux, Souvenir d'Elise, Annie Wood, Dupuy-Jamain, Louis Van Houtte, Duke of Edinburgh, and Horace Vernet. Teas were well exhibited, as might be imagined when Mr. Brown was exhibiting "at home;" his box of twelve consisting of Comte de Paris, Céline Noirey, Josephine Malton, Rubens, Alba Rosea, Adrienne Christophe, Bouquet d'Or, Madame Berard, Souvenir d'Elise, Souvenir d'un Ami, and Belle Lyonnaise. Mr. Stone took the first prize in Teas for Souvenir d'Elise, Duchess of Edinburgh, better than I have ever seen it; Vicomtesse de Cazes, Gloire de Dijon, Devoniensis, and Rubens. The worthy President, Mr. G. Baker, was a most successful exhibitor. Messrs. Paul & Son of Cheshunt and Mr. Mitchell of Pitdown sent some boxes not for competition, and very beautiful they were: in Mr. Mitchell's box was a very beautiful Rose, James Warden—I think James was the Christian name, but am not sure—a pink sport from Madame Clémence Joigneaux, partaking of all the fine qualities of that Rose but of a very lovely shade of colour. Mr. Paul had amongst his a very lovely Rose of last year, of which a note should be taken by Rose-growers. Mdlle. Gabrielle Luizet, a most beautiful pink, deeper and more solid in colour than Mons. Noman, and unless I am much mistaken a decided acquisition. Messrs. Paul also exhibited a box of their very brilliant Duke of Teck, so brilliant that it put Duke of Edinburgh quite into the shade; and even in this cloudy year, when Duke of Edinburgh nearly always comes shaded, this most brilliant flower was of the clearest and most intense scarlet. Let Rose-growers, then, note Beauty of Westerham, Mdlle. Gabrielle Luizet, James Warden, and Duke of Teck as worthy of being added to their collections.

I might linger long over the Roses, but I desire to say something of the table decorations, which always form a marked feature of the Reigate Show. I have seen many in various places, but I say without hesitation that a more chaste and exquisitely beautiful stand than that exhibited by Miss Thomson I have never seen. The terms of the competition restricted it to Roses and foliage. With a true poetic instinct she, while interpreting it literally, left the garden with its glowing beauties and betook herself to the hedgerows, where the earlier blooming varieties of the wild Rose are lovely in their white and pink beauty. Her stand, a Marsh one, with a trumpet top, had no Rose—but this in it, and with the exception of some fronds of *Adiantum* and a spray or two of the variegated Maple all her foliage was from the hedges also. It would be impossible to overrate its beauty; and I can only repeat what I said there, that had there been a gold medal to bestow it ought to have had it. The other stands were in excellent taste, but this certainly stood out far above the rest.

I do not know whether the treat of cut Roses was more enjoyed than the sight of the kind and hospitable President's garden which we all had after luncheon. Never have any of us seen Roses in more vigorous health, extracting strong terms of admiration even from such experienced growers as Mr. G. Paul, while the bedding-

out was in most excellent taste, the whole garden being the very perfection of order.

I cannot close these brief notes without expressing my hearty thanks to all connected with the Society, who did their very best to make a pleasant day for the visitor, in which they entirely succeeded. I send a prize list.—D., Deal.

[It was not received.—Eds.]

#### ROMFORD AND ESSEX HORTICULTURAL SOCIETY.

THE annual Show of this Society, which was held in the grounds adjoining Gildes Hall on July 10th, was on the whole a very creditable one. The weather for the season was favourable, and as a consequence the attendance was very good. Plants were not staged in large numbers, but most of them were well grown and in good condition. Mr. Bones staged the best group of flowering stove and greenhouse plants, his best plants being *Stephanotis floribunda* and *Erica Candolleana*. Mr. Bradley, gardener to O. E. Coope, Esq., was placed second with smaller but well-grown specimens. The best group of foliage plants was staged by Mr. Douglas, Loxford Hall; very noticeable being *Croton undulatus*, *Cycas revoluta*, *Kentia canterburyana*, and *Dasyllirion gracile*. Mr. Douglas also staged the best group of exotic Ferns, his specimens of *Adiantum concinnum latum*, *A. cuneatum*, *Gleichenia apiculata*, *Davallia Mooreana*, *D. polyantha*, and *Dicksonia antarctica* being remarkably healthy and fine. Mr. Woodhams, gardener to C. P. Matthews, Esq., Havering, was awarded the second prize for very creditable specimens of older varieties. Messrs. Bones and Douglas were also very successful in the other plant classes, and other prizewinners were Messrs. Meadmore, Romford; Saltmarsh & Son, Chelmsford; Duck, Soder, &c. Roses were shown in considerable numbers and in excellent condition.

Messrs. Saltmarsh & Son easily won the first prize for forty-eight cut Roses, some of the best being John Hopper, Mons. Noman, Ferdinand de Lesseps, La France, Lyonnaise, Duke of Edinburgh, Marquise de Mortemart, Marquise Adèle de Murinais, Madame Prosper Langier, Mdlle. Marie Cointet, and Dupuy-Jamain. Mr. Meadmore was second in this class. The best twenty-four was staged by Mr. Harrington, gardener to E. Mitchell, Esq., and the best twelve by Mr. Soder. Table decorations, bouquets, cut flowers, &c., were shown in good quantities, and *Panicles* in great variety by Mr. J. Carter, nurseryman, Ilford.

Mr. Bones staged the best collection of fruit, and also the best Peaches and Nectarines. Mr. Woodhams staged good Black Hamburgh Grapes, and was placed first, the same award being made to Mr. Douglas for white Grapes, and to Mr. Worthing, gardener to A. Moss, Esq., Chadwell Heath, for a stand of three distinct varieties. Mr. Iggulden, gardener to E. B. W. Baker, Esq., Orsett Hall, staged the best scarlet-flesh Melon, a seedling raised by Mr. G. Abbey; and Mr. Groom the best single dish, and also three dishes of Strawberries. The competition in the latter and also in most of the fruit classes was very good.

Vegetables were not largely shown by the gardeners, but the amateurs made a fair display. There was good competition in the class for two Cucumbers, but most of the exhibitors staged overgrown specimens. Mr. Iggulden staged a good brace of Col. Taylor's Montrose, and obtained the first prize; Mr. Douglas being placed second with good examples of Tender-and-True. The best collection of eight varieties of vegetables was staged by Mr. Iggulden, the second prize being awarded to Mr. Douglas for a collection but very little inferior. In the other vegetable classes Mr. Iggulden secured five first prizes, Mr. Soder two, and Mr. Bones one. Among the amateurs a police constable, W. Elms, showed remarkably well, obtaining nearly all the first prizes in the vegetable classes.

#### TUBEROUS BEGONIAS AT THE STANSTEAD PARK NURSERIES.

THE cultivation and improvement of these plants, which are now becoming so popular, have for some years received the careful attention of Messrs. John Laing & Co., and the result is that they now possess an extremely large collection of beautiful varieties. With many of these, visitors to the various metropolitan and large provincial horticultural exhibitions are already familiar; yet anyone who had seen the groups there shown would scarcely have expected to witness such an extensive and superb collection of plants as are now flowering at the above nurseries. In addition to the ordinary stock of specimen and half-specimen plants there are no less than twenty thousand seedlings, which are now being rapidly potted on. Some of these varieties evidently possess a very high degree of merit, the colours being remarkably rich and the flowers large. In a batch of seedlings of the Pearcei type are many beautiful shades of yellow, affording a pleasant contrast with the handsome foliage.

In one house several plants of the lovely new white *Begonia*



*Reine Blanche*, which was recently certificated at South Kensington, are very striking, and although the plants are small the floriferous habit of the variety is clearly evident. This variety was raised from seed obtained by crossing Veitch's Queen of Whites with one of Messrs. Laing's seedlings, and it differs from the former chiefly in being of more compact and sturdy growth.

In no form do these plants show to greater advantage than when grown and flowered in baskets. Two of the best varieties for cultivating in baskets are *Mrs. Wills* and *Admiration*, for their loose growth and pendulous flowers render them unsuitable for pot culture. The colour of each is similar but slightly darker in the former, and it may be described as a light crimson with a pinkish tint. The flowers are very freely produced, and a basket containing a well-trained plant of either variety is a valuable ornament for the conservatory.

Where so many varieties are excellent it is no easy task to make a selection; however, most of the following have had their merits recognised at Kensington and elsewhere by the award of first-class certificates. The best singles are *T. H. Laing*, a handsome flower of great size, rich scarlet. *Maude Churchill*, flower large, peculiar yellowish tint. *La Vestre*, medium size, brilliant scarlet. *Duchess of Edinburgh*, orange scarlet, enormous flower. *Charles Baltet*, dark scarlet, very large. *Paul Masurel*, acute petals, bright scarlet. *Massange de Louvres*, very profusely flowered, fine glowing scarlet. *Sir Trevor Lawrence*, handsome flower, rich crimson scarlet. *Dr. Duke*, large flower, pale pink, very distinct. *Mrs. Howe*, large flowers, petals rounded, salmon pink. *Model*, neat flower, abundant, deep pink. *Madame Hunnebell*, extremely large, salmon, free growth. Amongst the best doubles are *Marie Bouchet*, a fine scarlet, good flower; *Mons. Maitet*, orange, large and distinct; *Marie Lemoine*, a handsome full pink; and *Cloris*, rich scarlet, beautiful flower.

Many others are deserving of note; but persons interested in these plants who wish to see them in excellent condition cannot do better than visit Forest Hill, and they will be amply repaid for their trouble.—VISITOR.

## THE FRUIT CROP PROSPECTS IN KENT.

### MID-KENT.

**MAIDSTONE.**—It is feared that the fruit crop will be this year of the most unsatisfactory nature. Cherries will be thinner than they have been for some years; in fact, with few exceptions they are a complete failure. Pears and Plums are a plucky crop; the Plum trees generally are full of insects. Apples are also very uneven, though some kinds at present in places have a fair show. However, if the weather does not alter, and the nights become warmer, they will not hang. Gooseberries upon the whole are plentiful, though short at places; Black Currants in some parts are very uneven, and where there is a chance of a crop they are mostly covered with honeydew, and probably much of the fruit will drop. Red Currants promise well. Raspberries and Strawberries blossomed well, and with warm dry weather will be likely to grow a fair crop and pay well. Filberts and Cobs are plentiful at present, but it is too early to predict anything about the crop. In the parishes on the south side of Maidstone Gooseberries and Currants are under the average. Cherries quite a failure. Damsons bid fairly well. There are a few *Marococo*, *Diamond*, and *beach* Pears, but very few of other sorts. Apples will be very few. Pears—best nearly a failure, common ones a fair crop. Nuts also bid fairly well, but it is too soon to give a decided report. West of Maidstone the fruit crop prospects are by no means satisfactory. Though there was a great show of blossom on all kinds of fruit trees but comparatively little of it “set” for fruit, and lately many of the just developed fruit have fallen off. Cherries will be peculiarly few, notably the early sorts. Here and there, however, there are some *Bigarreau* trees that look like bearing a fair crop for the year. Apples will be short. Caterpillars are busy among the leaves, and the tiny Apples are fast falling off. Damson trees, usually prolific, will give a poor return. The leaves of these are much blighted. Gooseberries are an indifferent crop. Warringtons will be very scarce; *Lancashire* Lads have borne the trials of the spring much better. Raspberries bid fair to be abundant. Of Currants, though there was a promise of a very large yield, it must be said that many of the Black sorts have fallen off and are falling now, while the leaves of the bushes are in some cases shivered and blighted. The Red and White kinds look far more healthy, and will, it is thought, give a plentiful supply of fruit. Cobb and Filbert trees bloomed well, and the blossom set, but caterpillars have done considerable harm, so that this crop will not be so large as the growers had expected. Like the Hop plants, Beech, Lime, and other trees, many of the fruit trees are infested with various species of aphides.

In the parishes of Boughton Monchelsea and Langley not only

is there an absence of fruit, but the foliage generally has an unhealthy appearance, and there is a quantity of vermin. Cherries are very short. Apples below an average, and some kinds have almost entirely failed. Plums short with the exception of a few kinds. Gooseberries good in the immediate neighbourhood, but bad in some parts. Nuts apparently good.

In the Chatham district the fruit crop is exceedingly partial, but generally it is below a full average one. Apples promise a fair crop, while the same may be said of Pears. Gooseberries are below the average, and a full crop is not expected. Cherries only about half an average crop. Plums show a fair yield. In the district immediately surrounding the city of Rochester the fruit crop may be described as very “patchy,” with no prospect of anything like a large yield.

At Southfleet and its district the fruit plantations show a large yield of Strawberries, although they are very backward. Raspberries also a fair crop. Cherries below an average. Plums and Pears a good crop, and the same remarks apply to Apples. Gardeners in the Tunbridge district do not give a very good account of their grounds, as neither Cherries, Currants, nor Gooseberries will be plentiful. Apples have tolerably good show, but high winds have cut the trees about very much, especially those in exposed situations. In several gardens the Cherry, Peach, and Plum trees are swarming with vermin.

### WEST KENT.

Taking the northern part of this district—viz., from Halstead towards London and Dartford, we get the following accounts:—Strawberries a very heavy crop. Raspberries look well and bid fair for a good crop. Black Currants only a moderate crop, but Red Currants good. Gooseberries a rather indifferent crop, the frosts having considerably affected them. This also applies to Cherries. In some places the growth of Apples, Damsons, and Plums will only be moderate, a fair yield being the exception. The crop of Filberts and Cobs too will be only moderate.

### WHALE OF KENT.

The fruit crop in Oranbrook district will be in the aggregate by no means a luxuriant one so far as regards quantity. Cherries and Pears bloomed fully, and some sorts set well for fruit, but recently the trees generally have thrown out long shoots, and the fruit has fallen in large quantities. Apples, perhaps, will be a tolerable yield if all now goes on well, but the crop will be a plucky one. The same remark applies to Damsons and Plums; at places there are signs of a somewhat prolific yield, while at other places it is difficult to find more than a very few. The crop, however, will not be altogether unsatisfactory if the young fruit now on the trees should all grow and ripen. Strawberries a great crop but injured by wet. Raspberries promise a bountiful supply. Currants and Gooseberries will be but a moderate yield.

### EAST KENT.

Cherries excepted, fruit-growing is not so gigantically speculative in East Kent as in the western division of the county; but perhaps a failure is more widely felt, as most small occupiers and cottagers cultivate on a limited scale. Through a splendid tract of land, extending from Greenstreet to Rainham, are to be found more Cherry orchards than, probably, in any other part of England; and there are several growers of this description of fruit whose average income from that source alone amounts to from £1000 to £1200 per annum. A uniform heavy crop is not desirable, as it creates a “glut” in the market, and only low prices are at such times realised. These are not remunerative, owing to the cost of gathering the fruit and carriage to the markets of the metropolis. Indeed, it was but a few years ago that many growers were brought into debt by their salesmen on account of some of their consignments of Cherries not realising sufficient to meet the charges of carriage and commission. A few weeks since the appearance of the trees betokened another such minor calamity this season; but a marvellous change has “come o’er the spirit of the dream,” and the crop of Cherries in East Kent will be very short this year. Plums have fared somewhat better. Apples promised a good yield. Pears are almost a total failure.

In the neighbourhood of Ashford Apple trees promise well, and the same remark applies even more fully to Plums; but Pears are scanty, and Cherries very deficient. Gooseberries and Currants are an average crop. In the vicinity of Smarden and Bethereden the orchards look very badly; the Apple and Pear trees have an unkindly appearance; there will be but little fruit, and that very inferior. Cherries are pretty well a failure.

In Faversham and district the crop varies a good deal. Cherries are decidedly short. Here and there may be found a fortunate orchard, but generally the crop is light. Gooseberries are plentiful, Red Currants heavy, and Black Currants a fair crop. There never was a better show of Strawberry bloom, and Raspberries are also good, while wall fruit of all kinds is very scarce.

The reports from Sittingbourne, which is the centre of an extensive fruit-growing district, are very unfavourable with regard to the crop prospects, and it is clear that the ingathering will not only be a late one but also a very small one. In many orchards, and among them some of the most celebrated Cherry plantations,

n the district, there are numbers of trees in which a ladder will not be placed. In one or two exceptional cases, however, trees are well loaded with fruit. The crop of Apples and Pears will also be very short, and the way in which Plums are running off now makes it extremely improbable that there will be half an average crop. The only bright side to the picture is that there is likely to be quite an average crop of under fruit—Currants and Gooseberries.

#### ISLE OF THANET.

The hopes raised by the abundance of blossom on our trees will not be realised, as the cold nights and ungenial days which have so long prevailed have not been favourable to the maturing of the fruit. There is a fair crop of Gooseberries and Currants. Strawberries and Raspberries plentiful. A spare crop of Apples, but very few of the choice sorts of Pears; the hardier sorts hang well. Apricots and Peaches seem to be going out of cultivation for outdoor wall fruit, Thanet soil or atmosphere not suiting them, and Plums of choice kinds are replacing them. Cherries, Plums, and other stone fruits will be scarce in the island.—(*South-Eastern Gazette*.)

### LONDON CENTRAL FRUIT AND VEGETABLE MARKET.

THE Corporation of London at their last meeting approved the City architect's plans for the erection of a Central Fruit and Vegetable Market on land adjoining the Central Meat and Poultry Markets at Smithfield, at an estimated cost of £115,000. The market will have a frontage on four streets or roads—viz., Charterhouse Street, western roadway, new southern roadway, and Farringdon Road. The main floor of the market will be as nearly as possible level with the other markets, so that the entire range will be readily approachable the one from the other. There will be three principal entrances on the east, north, and south. The plan shows an area of nearly 44,000 feet devoted to wholesale market purposes, surrounded by forty-one shops fronting the several streets, which can be used for retail or other purposes, and these occupy an area of some 16,800 feet. The general or market area is approached, not only by the three main or vehicular entrances, but by two entrances for foot passengers. The market will consist of a series of shops, thirty-three in number, having in front pitching stands for goods and waggon stands, the whole being approached by a roadway having a width of 18 feet, always clear for vehicular traffic. In the middle of the market area is a further arrangement of pitching stands, with an area of about 4400 feet, including gangways. In roofing the market the floor will be kept as clear and open as possible, the detached main roof supports or columns being thirty-seven in number, and the clear span of the roofs is 45 feet. The roofs will be of a light iron construction, with a range of glass louvres at the plate and ridge levels, affording an ample amount of light and air, so requisite for a market of this character. The height of this roof will be 28 feet to the level of plate and 45 feet to the ridge of louvres. There will be a roadway approach to the basement, which will be suitable for market and railway purposes. The cost of the superstructure is estimated at £115,000, but the land and approaches will cost in addition £175,937 according to the estimate. The annual charges upon the market are estimated at £14,712, and the income £16,326, leaving a surplus of £1614. No mention, however, is made of tolls, which are authorised by the Act, nor of the authority of the Corporation to dispose of the existing Farringdon Market.

### WORK FOR THE WEEK.

#### FRUIT HOUSES.

*Vines*.—Hitherto the season has been anything but a favourable one for Grape-growers, and really it seems as if there were no likelihood of a change, for there is a great absence of sun heat and the nights are cold. Abundance of fire heat must be given to late Grapes, and also to intermediate crops about colouring; a minimum temperature of 70° should be maintained night and day, and air given freely whenever the state of the weather admits. Red spider is somewhat troublesome, more so than might have been expected from the dull sunless weather; but where it has made its appearance the surest remedy is to heat the pipes to about 212° Fahrenheit, and then coat them with a mixture of sulphur and skim milk; keep the pipes hot for about an hour, and then allow them to cool down to their ordinary temperature. It is also a capital plan to sprinkle guano about the house; the ammonia given off is inimical to insect life and beneficial to the foliage. Late Grapes intended to hang on the Vines through the winter should have a final thinning, and the smallest berries should be removed, as they spoil the appearance of an otherwise

fine bunch. The rain this season has been sufficient for outside borders, but they should be well watered with tepid liquid manure if dry weather sets in. Inside borders should be kept well supplied with soft water, previously mulching them with short stable manure. As the period when scalding occurs is at hand we would repeat our advice to guard against it by increased night temperature and abundant ventilation, so as to reduce the atmospheric moisture until the critical stage is past. After then fire heat may be economised by closing early to admit of the sun raising the temperature to 90° on fine afternoons. Regulate the young growths as required, adopting the extension rather than the restrictive system where there is room for it without crowding, keeping all gross laterals stopped so as to cause an equal flow of sap throughout the Vines. Houses where the Grapes are ripening should have the ventilators left open constantly, the degree of ventilation depending on the weather, with sufficient atmospheric moisture to maintain the health of the Vines. The inside borders of early houses cleared of the crop must not be neglected in watering, and if mulched they will remain moist longer, and cracking will be prevented; at the same time avoid overwatering after the wood is ripe, as that will only induce the laterals to grow vigorously. Young Vines of this season's planting should, provided the light is not too much obstructed, be allowed to grow unchecked, it being presumed that they will be cut back to the bottom of the trellis, or to three or four eyes at the winter pruning. Any supernumeraries intended for next year's fruiting should be regularly stopped at a length of 7 or 8 feet, removing the laterals from the buds intended to give fruit next year, preserving the old leaves; and as the wood will require thorough ripening a free circulation of air will be necessary, with fire heat if the weather be cold and wet. Vines in pots intended for fruiting next season should by this time have completed their growth, especially those required for early forcing, and may be exposed to all the light and sun possible, so as to thoroughly ripen the wood and the buds.

*Figs*.—The second crop will now be advancing rapidly, and the fruits must be thinned where too thickly set. Attend to tying in and stopping the shoots, water the borders freely, and syringe the foliage vigorously twice a day so as to keep red spider in check. Where the fruit is ripening a constant circulation of dry warm air is required, which can only be maintained in dull cold weather by employing artificial heat. Trees in pots intended for early forcing next season must be well attended to; syringing them every day, and applying liquid manure frequently at the roots. The trees must be well pruned, especially the strong growers, as they require much cutting to induce fruitfulness. The medium growers do not need such close pinching as those of more vigorous habit.

*Peaches and Nectarines*.—When the fruit is all gathered in the earliest houses attend to watering the inside borders, also syringing to keep the foliage healthy; and to assist in maturing the buds for another season's forcing. Remove if possible the sashes from the earliest house, and cut from the trees the shoots that have borne fruit and are not required for extension. A judicious removal of shoots that are not likely to be required in autumn will admit of fully exposing those that remain to light and air, and insure their thorough ripening. If the trees have been heavily cropped or show signs of exhaustion liquid manure may be applied to the inside borders, but trees that are too vigorous and less fruitful should be marked for lifting. In the succession houses fruits that have passed the stoning process should be exposed to the sun as much as possible by turning all pendant fruits point upwards, drawing the leaves aside or shortening them as may be necessary. The shoots which bear the fruit must be closely stopped. The inside borders must be well watered, and if some liquid manure is applied occasionally it will assist the swelling of the fruit. Syringing morning and afternoon until the fruit begins to ripen, when it must be discontinued, admitting air freely. In the latest houses where the fruit is stoning great attention will be necessary in keeping the inside borders duly supplied with moisture and in thinning the fruit; a Peach to every square foot of wall or trellis covered by the tree is ample. Timely thinning in the case of cold houses or wall cases greatly increases the size of the fruit retained. Ventilate the houses very early in the morning, and close them early in the afternoon so as to raise the temperature to 80° with sun heat, and open the ventilators a little before nightfall. In late houses it is particularly desirable that the trees be kept well pruned and closely tied in.

*Cherry House*.—After the fruit is gathered the chief object is to secure the swelling or development of the buds by keeping the foliage free from every description of insect pest, syringing abundantly, and if necessary apply an insecticide, as it is of the greatest importance that the foliage be kept clean and healthy. Although less moisture is necessary than when the fruits are swelling, yet it is necessary that there be sufficient moisture at the roots to maintain the trees in a healthy state. Trees in pots from which the fruit is gathered may be placed outdoors in the full sun, plunging the pots in ashes; water as required to keep the soil moist, and syringe in the evenings of hot days if there are any.

*Cucumbers*.—The weather has not been favourable to the Cucumber, there being an almost total absence of sun, resulting in a

plentiful crop of yellow fruits, together with mildew in the foliage and canker at the collar, and in some instances gum in the shoots. It is necessary to still continue gentle fires, especially at night and on dull days. For mildew there is nothing better than flowers of sulphur, and for canker fresh-slaked lime. After dull weather there is more necessity for shading than when the days are successively fine, as the foliage is more flabby; therefore shade upon a return of bright weather so as to prevent flagging, which not only destroys the energies of the plants but is liable to result in scorched leaves and stunted fruit, with subsequent attacks of red spider. Pot off the plants for autumn fruiting, in due time pinching out the growing point above the second rough leaf if the plants are for growing in pits; but for trelliswork place a small stick to each, securing the shoot as it advances. Prepare the soil so that the plants may be placed out when ready, the house or pit being previously thoroughly cleaned. In pits and frames the growths must be regularly looked over, cutting out those that are exhausted, training and earthing-up the plants as may be required, sprinkling overhead at about four o'clock, or on showery afternoons the lights may be removed for a short time.

#### PLANT HOUSES.

**Stove.**—The numbers of table plants now required, and also for the decoration of rooms, halls, &c., make it necessary to grow some of the most useful and effective for the purpose, and as most of the plants used for such purposes are not required large it is necessary to keep up a continuous supply. Most of the *Dracenas* are available, such as *D. elegantissima*, *D. terminalis alba*, *D. gracilis*, and *D. Cooperi*. *Crotons* are useful, especially *C. Johannis*, *C. Weismanni*, *C. angustifolius*, *C. Challenger*, *C. Hanburyanus*, and *C. Earl of Derby*. The Screw Pines are very effective, such as *Pandanus Veitchii*, *P. utilis*, *P. graminifolius*, *P. ornatus*, and *P. javanicus variegatus*; *Aralia elegantissima*, *A. leptophylla*, *A. pulchra*, *A. Veitchii*, and the var. *curculima* are unrivalled table plants. Few surpass the beautiful *Curculigo recurvata variegata*. *Cyperus latus* and *C. alternifolius variegatus* are also useful, and the merits of the *Indiarubber* (*Ficus elastica*), and the variegated *F. Parcellii* are well known. Some of the best Palms are *Cocos Weddelliana*, *Thrinax elegans*, *T. argenteus*, *Demonorops plumosus*, *D. fissus*, *Geonoma gracilis*, *Kentia gracilis*, *Chamedorea graminifolia*, *C. Ernesti-Augusti*, *C. elegantissima*, *Hyophorbe indica*, and *Euterpe edulis*. All have persistent foliage, and with ordinary care will be available for a lengthened period, it being important that they be well prepared and have the growth sufficiently hardened before being employed. Similar remarks apply to Ferns, such as *Adiantum cuneatum*, *A. gracillimum*, *A. formosum*, *A. trapeziforme*, *Asplenium laxum pumilum*, *Lomaria gibba*, *L. discolor bipinnatifida*, *Davallia Mooreana*, and *D. parvula*, *Nephrolepis Duffii*, *Pteris serrulata* and vars., *P. cretica albo-lineata*, few plants being finer for this purpose than *Selaginella cesia*.

#### FLOWER GARDEN.

The pricking-out of hardy perennials and biennials must be attended to as the plants become fit, so as to have them sturdy. Seeds may yet be sown of most perennials and biennials, but the earlier the better. The propagation of plants for spring bedding should be proceeded with, and such as are raised from seed, as *Silenes* and *Myosotis*, must be sown at once. Seedling Pansies may be planted out where they are to flower, also inserting cuttings and saving seed from the best flowers. Prick-out seedling *Polyanthuses* and water them in dry weather. Layer Carnations and Picotees as soon as the shoots are long enough. *Gladioli* are looking very sickly, probably owing to the cold and wet—bright weather is particularly desirable just now. *Zinnias* and *Asters* required to produce extra large blooms should have the buds freely thinned and receive plentiful supplies of liquid manure. *Dahlias* and *Hollyhocks* as well as subtropical or other plants with a large leaf surface must be securely staked and tied and supplied with liquid manure. *Roses*, too, will be greatly benefited by similar treatment, which will induce them to make fresh growth strongly for autumn flowering, cutting off all decaying flowers and flower stems. Shorten back the strong barren growths, keeping the growths free from insects by washings from the garden engine, and if need be apply an insecticide such as soft soap 8 ozs. to the gallon of water, with a pint of tobacco juice to each gallon, and against mildew dust with flowers of sulphur.

#### TO CORRESPONDENTS.

**BOOKS (R. P.).**—The work you name is sound and reliable, although it does not include such modern practice as carpet bedding. Not knowing the subject on which you specially require information we are unable to give you a more explicit reply. The question for you to decide is whether a number of smaller works on special subjects would not be more useful to you than one or two bulky and expensive volumes.

**THE LIVERPOOL HORTICULTURAL ASSOCIATION (C. C. H.).**—The name and address of the Secretary is Mr. David Thomson, 69, St. Albans, Everton, Liverpool.

**CLIMATIS JACKMANT (J. G.).**—It is not an herbaceous plant, but a deciduous climber.

**ROSE UNHEALTHY (Mrs. H. T.).**—Poverty of soil is the chief cause of the foliage being so unsatisfactory. If you remove the old soil from the roots

and apply a compost of half loam and half manure, and give liquid manure copiously, the *Rose* will, we think, produce healthy foliage and fine blooms. *Roses* planted near walls generally suffer by drought at the roots. The abnormal growth of the *Geraniums* is the result of the wet and dull season. With finer weather the plants will grow and flower in their usual natural manner.

**NICOTINE SOAP (A Constant Subscriber).**—It can be obtained from Messrs. Corry & Soper, Shad Thames, London, E.C. In pronouncing *Clematis* emphasis should be placed on the first syllable "Clem," the "a" following having a very short sound.

**GERANIUM MOLLE AUREUM (J. S. S.).**—You have been rightly informed that there is what is termed a golden variety of *Geranium molle*. There is a small bed of it in Battersea Park, the foliage being a greenish yellow, but will perhaps become brighter with brighter weather.

**FUNGUS ON FERN (Essex).**—The *Fern* is, we think, *Cystopteris fragilis* var. *Dickleana*. Since we received your specimen we have seen at Coombe Bank a plant of the *Fern* mentioned attacked in precisely the same manner as yours is, and the fronds are turning brown, the surrounding *Ferns* being quite free from fungus and perfectly healthy. Removing the worst fronds and applying sulphur to the others is the only remedy we can suggest.

**GRAPES WITHERING (Lodge).**—The example you refer to as having been sent must have been lost in transit, as we could not find it in the letter. If you will send a small bunch of the *Grapes* and some particulars of the conditions under which the *Vines* are grown we will endeavour to assist you. You will find the names of plants below.

**CUCUMBERS UNSATISFACTORY (W. Crick).**—The exudation from the sap from the fruit and rupturing of the cuticle is due in a great measure to the absence of sun, the leaves of the plants being unable to elaborate the sap. As the weather improves so will the *Cucumbers*; but in the meantime the foliage should be so trained that every leaf is exposed to the light, a moderately high temperature and not over-moist atmosphere being maintained, the plants at the same time only having sufficient water to keep them in a fresh healthy growing state, an excess of water at the roots being under the circumstances very prejudicial.

**MELON PLANTS GOING OFF AT THE COLLAR (L. L. D.).**—The cause of this is difficult to explain. Some attribute it to one thing and others to another; but the chief reason in our opinion is the watering overhead and shutting up closely at night, which causes the vapour to condense, and this so charges the parts with moisture that ulceration of the stem takes place. It not unfrequently happens that the canker or ulceration of the stem follows a close pruning, or the removal of a considerable quantity of foliage accompanied, as it very often is, with watering. This so gorges the plant with sap that it comes from the cut parts, and this exudation is followed by the decay of the stems and ulceration at the collar. The only effectual remedy is to keep it dry, giving a little air at night so as to prevent moisture condensing and dripping on the stems. In and after August *Melons* in dung frames do not require frequent supplies of water, and at no time should large removals of the foliage be practised, but stop the growth frequently so as to render such removals of leaves unnecessary.

**MAGGOTS ON MUSHROOMS (H. S.).**—Mushrooms are usually maggoty in summer. Excessive heat is the cause. There is no cure, and the only preventive is to keep the house as cool as possible by ventilation during the night and early morning, and keeping the floor, &c., damp during the day. *Mushrooms* succeed better in cool shady places out of doors or in cellars during summer than in houses.

**ISEMENE MACLEANA AND TUBEROUS BEGONIAS (A Constant Subscriber).**—Plants of the former should be taken up in the autumn when the foliage is decaying, as they require rest during winter. A sandy soil is most adapted to their requirements, and with the above treatment you will no doubt succeed in obtaining flowers. Watering *Tuberous Begonias* with liquid manure must be determined by the character of the soil in which they are planted. If it is poor the plants will be benefited by a little assistance after they have become established.

**PRIMULA DENTICULATA TREATMENT (O. S. Roberts).**—The plants that were divided and potted in spring should, after flowering, be kept duly supplied with water and be placed in a cold frame on a north border, or shaded from bright sun and freely ventilated. They will also succeed with the pots plunged in ashes on a north border, where they should remain until autumn and then be placed in a cold frame, removing them to the greenhouse in spring. The trusses of bloom now appearing should be removed. In the open ground this species does not require different treatment from other *Primulas* grown as border plants.

**INARCHING VINES (A. B.).**—All the *Vines* you name will form suitable stocks for the *Black Hamburgh*. The operation must be carefully performed so that the union may be complete some time before the fall of the leaf, and it is best done early so that a good growth can be made afterwards.

**AERIAL ROOTS ON VINE RODS (Albert C. C. Henry).**—The aerial roots are evidence of defective root-action, and may be due to the cold and wet of last winter having acted injuriously on the roots in the border, and as the spring and summer have been cold and wet, sufficient fresh roots have not been produced to meet the requirements of the foliage. Do not remove them, at least not until the *Vines* are in better growth, and then do so gradually. The drainage being good, roots will form when the soil becomes warmer, and to retain it the outside border should have a good covering of dry protective material early in autumn.

**EXUDATION FROM ARAUCARIA (D. W. P. B.).**—We have noticed this before and also in other *Coniferous* trees after a severe winter, and it may be a result of the frost causing an undue expansion of the bark. No injurious results are likely to follow, at least we have not noticed any.

**SOWING AUCUBA BERRIES (An Old Subscriber).**—Sow the berries as they are in sandy loam, covering them about half an inch deep, and place the pots in gentle heat, and when the seeds have germinated remove the pots to a light position in a cool house.

**PEACH AND NECTARINE TREES FOR SUCCESSION IN COLD HOUSE (Journal Reader).**—*Peaches*: Early Beatrice, Early Alfred, Hale's Early, Rivers' Early York, Dr. Hogg, Early Groses Mignonne, Dymond, Merlin, Magdala, Alexandra Noblesse, Galande, Royal George, Groses Mignonne, Noblesse, Violette Hative, Bellegarde, Barrington, Prince of Wales, Late Admirable, Raymakers, Stirling Castle, Golden Eagle, Walburton Admirable, and Lord Palmerston. *Nectarines*: Lord Napier, Murray, Elruge, Violette Hative, Pitmaston Orange, Pine Apple, Hardwicke Seedling, Balgowan, Humboldt, Albert Victor, Prince of Wales, and Victoria.

**NAMES OF PLANTS (*Dwarf-trees*).**—1, *Spiraea triloba*; 2, *Erigeron purpureum*; 3, *Egopodium podagraria*. (*Darwin*).—1, *Leptospermum trilobatum*; 2, *Mesembryanthemum tenuifolium*; 3, *Sedum carneum variegatum*; 4, *Cytisus racemosus*; 5, *Oleia cretica*; 6, *Pelargonium ardens*; 7, shed all its petals. The numbers attached to specimens sent for identification should always be affixed so that they can be seen without untying the ligatures. (*C. C. E.*).—*Salix pentandra*. (*A. M.*).—1, *Diplazium glaucosus*; 2, *Spiraea Aruncus*; 3, *S. corymbosa*; 4, *S. bella*. (*Lodge*).—1, *Davallia elegans*; 2, *Asplenium Adiantum-nigrum*; 3, *Paucratium fragrans*; 4, *Hemerocallis flava*; 5, *Agapanthus umbellatus variegatus*; 6, *Selaginella coccia*; 7, *Colerus pictus*; 8, specimen insufficient. (*R. F. Wheeler*).—1, *Sempervivum Bramii*; 2, *Sedum reflexum*; 3, specimen too small; 4, *Saxifraga carinthiaca*; 5, *S. Hortii*; 6, *Mesembryanthemum falciforme*; 7, *Sempervivum fimbriatum*. (*G. O. S.*).—The specimen resembled a *Tradescantia*, but was too withered for identification. (*C. T. H.*).—1, *Polypodium Phymatodes peltidum*; 2, *Doodia aspera*. (*Asvors*).—*Fabiana imbricata*. (*J. S. B.*).—The sepals had fallen from the Clematis, but we think the variety is *Miss Bateman*. (*X. F.*).—Your best mode of obtaining the names of your Roses is to compare the blooms and habits of the trees with others in a named collection. It is impossible for us to undertake the naming of large numbers of varieties of Roses or other florists' flowers. (*Various*).—We have this week received two collections of plants to name without a line in reference to them being either enclosed with the flowers or received by letter; also a box of sprays of flowers without any numbers attached. (*South Wales*).—13, *Begonia ferruginea*; 14, *B. Weltonensis*; 15, *B. fuchsoides*; 16, *B. lucida*; 17, *B. Ingrami*; 18, *B. parviflora*; 19, *Justicia speciosa*; 20, *Asclepias speciosa*, but flowers not expanded; 21, *Panax longifolium*. The Ferns you must send again and packed differently; all of them being stitched together rendered separation impossible without tearing the numbers; besides, we do not undertake to name more than six specimens at one time, although we have exceeded that number in this instance. (*A. K. C.*).—It is *Dendrobium suavisimum*.

## THE HOME FARM:

POULTRY, PIGEON, AND BEE CHRONICLE.

### SUBURBAN VILLA FARMING.

(Continued from page 36.)

BEFORE entering upon the subject of buildings, &c., at the farmery there are some incidental matters relating to the general management of the villa grounds, gardens, buildings, dairy work, &c., which we must not overlook. For instance, where the whole occupation extends over twelve acres there will be the general superintendence to be provided for. The head gardener may very properly be considered the responsible person, and if he has a general knowledge of farming matters so much the better. If a bailiff is kept to look after the cultivation of the land and pastures and the cattle entirely, well and good; but there would in this arrangement be one objection—that is, divided responsibility to a great extent, which never answers a good purpose. Therefore we advise that the gardener be made responsible for all matters, including keeping the accounts, &c., unless, as sometimes happens, the occupier or proprietor of the villa takes sufficient interest and pleasure in the general management to exercise an active supervision.

There is yet another matter to be considered relating to the dairy work—whether the milk should be taken to the villa night and morning and a dairymaid kept, or whether the gardener's or carter's wife should be required to manage the dairy work at the farmery. In the latter case a dairy room must be provided at one of the cottage tenements. We can recommend the latter as being the best arrangement, for, having been agent upon estates where it has been carried out both ways, our experience tells us that it is now very difficult to obtain a servant at the villa who would engage to make dairy work a part of the daily duties. We have taken into consideration the various points, knowing how difficult it is to secure people fit for the duties required in the suburban districts, where the demand for all kinds of labour exists at high wages; and we find that the only way is not to depend upon casual labourers, but to secure the services of steady and industrious men with families, and furnish them with a comfortable cottage residence at liberal wages. Although we have thought proper to illustrate our subject by adopting the extent of the villa farm as twelve acres, in those cases, however, where there are only a few acres of pasture and no arable land, if there should be a large garden and orchard attached these under spade culture may be made to produce vegetable food enough for the small number of live stock which would be required upon a limited area.

In referring to the buildings at the farmery for the accommodation of live stock we shall at present only allude to them as

if they were not required to be newly erected, and by so doing it will be probably the best guide for the alteration or adaptation of old buildings for new purposes. The first matter which we have to recommend is a shed for shelter and shade connected with the pastures. As, however, an ordinary elongated hovel is but poorly adapted for the purpose we will endeavour to explain a shade and shelter of our own design, which on several estates has met with the approval of the proprietors. It need not be an unsightly object in the pastures, but, on the contrary, may be made somewhat ornamental if required. For paddocks or small pasture enclosures we advocate an hexagonal shed about 20 feet across containing three divisions, one of which, facing the north, serves the purpose of shade in hot sunny weather; the other two, one facing south-east, the other south-west, are both intended for shelter during temporary storms, which often happen in our climate during spring and autumn. This building may be placed where two or more pastures or paddocks join; and in order that cows or horses may have access when requisite the building is surrounded, or partly so, by iron cattle hurdles, one of which removed at any time enables the animals to enter for shade or shelter as the case may be, which they can easily do when the divisions of the paddocks radiate from the circular fences. We submit a ground plan (fig. 6) and also elevation (fig. 7, page 58) of the shed, the dimensions being 20 feet across on the ground plan divided into three

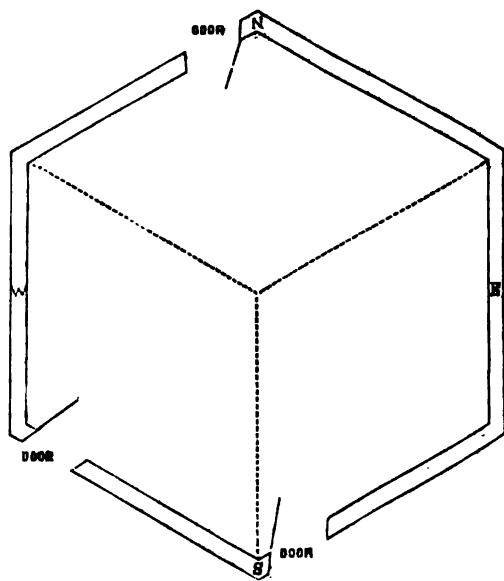


Fig. 6.

portions; the partitions, which are boarded, are carried up to the roof to prevent any current of air inside. The floors of these compartments are sunk 1 foot below the ground level, in order that they may be filled up level with dry screened earth, ashes, or peat mould for the absorption of urine and for future use as manure, the solid droppings of the stock to be removed to the manure heap as cleanliness dictates. The entrance to the compartments is by openings or doors 8 feet in width; the height of the shed up to the eaves is 7 feet and boarded up. The roof (see page 58) we thatch with reeds or unthreshed straw of rye or wheat; it may, however, be made with various materials if thought to look more ornamental. A manger for feeding or trough for water may be added if necessary. Where, however, we have buildings at the farmery properly constructed this is scarcely necessary.

We have now to consider the construction of buildings to accommodate the live stock, the nag stable, the cart horse stable, the cow pens, and also the pens for swine. As, however, we defer at a future time to furnish our readers in these columns with designs and descriptive plans of buildings for maintaining all the animals of the home farm in health and comfort, not forgetting the saving of manure in the most valuable condition, we shall now only refer to the description of buildings which may be sufficient to enable readers to improve any accommodation they now possess. We recommend that the stable for nag horses and cart horses also should face the north-west; and in consequence of our disapproval of the ordinary stable accommodation with its brick or stone floor, its drain and sink trap, tank, &c., and its concomitant disadvantages, including the tethering of the animals, we have for many years adopted the plan of boxes instead. The size of box we prefer is 12 feet by 18 feet, excavated 2 feet in depth below ground level, and filled with fine dry earth rammed down very firmly—hard, the divisions of boxes to be boarded up

7 feet in height. Such a box will answer the purpose for one horse at liberty or two horses tethered, and with the earth floor there is a great economy of straw, very little being required, as the urine will be absorbed and the solid excrement only will require to be removed daily. If one horse only is kept in the box the earth floor will not require removal for several years; in any stable with ordinary ventilation the air will always be pure, and the earth floor will afford the best lying and standing. The liberty also the animal enjoys in a box is most important, and we reckon that horses thus provided for will last three years longer than when stalled in the ordinary way. The boxes for cows and pigs should face the south. The same mode of management as just described will apply with equal advantage for cows, only the boxes need not be more than 10 feet by 10 feet, and may be divided only by three or four hollow iron bars or wooden rails. The boxes or pens for pigs may be of the same dimensions, and should be entirely under cover with wood fence and wicket at front 5 feet high, thus leaving an open space of 2 feet up to the eaves for light and air; the division of pens to be of iron rods  $\frac{3}{4}$  inches apart, the floor of the pens to be excavated 18 inches and filled with earth 8 inches deep, and the manure allowed to accumulate, the dung to be spread over the pens daily, and also fine earth or sand, and the pigs properly rung to prevent rooting, and the consequent heating of the mass of manure, and only littered with short straw as cleanliness requires. The cow boxes and pig pens being in one range, a 4 feet wide feeding path will be convenient for both. It will be readily seen that in the plans we have endeavoured to describe there will be great economy of straw for litter, an item of consequence where none is grown, and also that the health of the animals is insured as far as possible, and the manure made of the best quality; at least these are the results we have obtained in our own practice.

#### WORK ON THE HOME FARM.

**Horse Labour.**—Up to the time we are writing it has only been at intervals that the horses have been able to continue the tillage and seeding for turnips, rape, &c. Fortunately the planting of cabbage of sorts, including the Thousand-headed kale, has filled up the time, which would have been lost while waiting to drill the seed of turnips, &c., on account of the succession of wet and stormy weather. Wherever farmers have provided for cabbage or kohlrabi plants by making seed beds last autumn or spring, or whenever they can purchase plants readily, this kind of work may proceed in spite of the weather if it is done by setting the plants as fast as the land is ploughed; and when the dung for these crops has been laid out and spread it need only be done when the weather is adverse for ploughing and drilling on the fallow preparation. The planting of cabbages, &c., must be approved upon all land where green crops have been cleared, for although there is a little more expense in planting than in tillage and seeding for roots, yet there is a much greater certainty of the crop taking if properly planted; the plants are sure to live and succeed be the weather too wet or too dry for seeding. Besides, the drilled seed may set vegetate, the infant plants may be attacked by the fly, and later on by wireworm, and last of all by grubs; but when cabbages are set properly they are proof against all enemies. There is another point in favour of planting such crops—viz., a gain of a month or five weeks as regards time if the time of planting is compared with the time of drilling. This wet summer has been much against the making of fallows, but in case of fallows for the autumn sowing of wheat the rougher and more cloddy the land is kept the better, and instead of dragging, rolling, and harrowing let the land be continually cross-ploughed as soon as the weeds make their appearance. This applies more particularly to strong and heavy wheat land, as it exposes a greater surface to the action of sun, wind, and rain, and these alternations of weather are beneficial so long as the ground is rough; but as soon as the land is worked down fine it begins to suffer immediately from any excess of moisture. On the other hand, when the sun is all-powerful the soil is not much benefited if it lies smooth and level.

**Hay Labour.**—Large tracts of pasture land in the various counties and climates of the kingdom have not yet been cleared of the hay crop, although the mowing machine and other labour-saving machinery have been in full operation, and in a season such as we have lately experienced the crops of hay have been seriously injured. Every device which practical intelligence can turn to account has been adopted, yet when the weather proves adverse really good hay cannot be made. It then becomes a question what is the best course to pursue after the hay has been washed and discoloured by rain, for it has lost its aroma peculiar to good hay when well secured. We have known salt used, but we have often seen it do more harm than good, for in the event of the slightest amount of water being in the hay at stacking time the application of salt is sure to make it musty and comparatively useless, but when perfectly dry it may be and often is better fodder; still there is no aroma to attract and induce cattle to eat it. There is, however, another view of the subject—that of spicing the hay as it is stacked, which certainly tends to improve not only hay damaged by rain but also hay made from inferior pastures, where the herbage is naturally sour and coarse. The superiority of spice as compared with salt is that it gives the hay

an attractive smell as well as an improved flavour, and yet the cost is not more than 2s. 6d. per ton if Simpson's spice is used. We have abundance of evidence from practical farmers with whom we are acquainted that its use has in past seasons not only been advantageous generally, but has surpassed their expectations as to the way in which cattle and sheep have eaten the hay and made good proof upon it. The farmers in the lowland pastures must bear in mind the result of last year, where large numbers of sheep were lost from the coat or rot, and this is always the result more or less of a wet and stormy summer. It is easy to be prepared for the emergency where the farmer occupies arable land as well as pasture, because not only do the sheep suffer from eating grass the produce of wet pastures, but from taking into their stomachs the entozoa which are the cause of the parasites found in the sheep's liver. It may, however, be provided against, as it is well known to us that the animals if kept in the same lowland pastures night and day may suffer from the rot in such seasons as last year and the present; but they do not suffer from the fact of taking in the entozoa into the system if the animals are allowed a liberal allowance of vetches, clover, mustard, saintfoin, &c., once a day, and made to lie upon the arable land at night.

#### PLOUGHING BY ELECTRICITY.

Two French gentlemen, Messrs. Chrétien and Felix, who are engineers by profession, have lately been making a trial of ploughing by electricity at Sermaize in France, not far from Paris. The mechanical power which is generally employed in England has for its base the employment of steam ploughing machines, which are taken to the fields and worked by the action of drums on which are enrolled wire cables, which draw ploughs with several shares. The cost of this machinery is considerable, and the cost of superintendence and maintenance are equally dear. They require special care in looking after, and they are difficult to work in the fields, especially in wet weather, and they also require a considerable quantity of water to be carted. The work, however, is better done and the cultivation deeper than with horses. But the steam plough is by no means general in France, on account of the land being divided into such small pieces, and of the above inconveniences.

Messrs. Chrétien and Felix, struck by this state of things, and having known for some time the remarkable properties of the Gramme machine, which has become familiar through being used along with the Jablockoff candles for lighting the Thames Embankment, the idea occurred to them to utilise it as a generator of force. Powerful Gramme machines produce a considerable quantity of electricity, and it is this electricity conducted at 1000 or even 2000 metres (the metre is rather more than a yard) by means of metallic cables, which communicate the movement to other Gramme machines directly coupled with the pulleys drawing the ploughs. Thus under this simple gift of the easy transport of motive force or electric power (I coin the word) to a distance the inventors have combined a series of mechanical gear for ploughing, threshing grain, the unloading and loading of merchandise, harrowing, weeding, sowing, and, in general, for all the operations of the farm usually executed in England by means of locomotive engines. Two of these works have already been established and experimented on at Sermaize—one a lift for the discharge of beetroot from barges, and a double pulley for ploughing.

In the French "Agriculture Pratique" to which I hereby express my acknowledgements, there is a drawing of a field with the electric ploughs at work. At the first glance it looks very much like a double system of Fowler's steam ploughs on a small scale at work; but when you look at the engine more closely you do not see any funnel, and the space usually occupied by the boiler is occupied by the Gramme machine, wheels, &c.

This invention is quite in its infancy at present, having only been started a few weeks, and therefore we must expect that further improvement will still be made. They only work two shares at present in the plough, but are increasing the power of the machines. Whether the invention is likely to become a financial success as well as a practical one within a reasonable time, no doubt we shall soon be in a position to judge.—FREDERICK BRAVENDER, Cirencester.

#### POULTRY FARMING.—No. 3.

We come to the particular points to be considered before any attempt should be made to keep poultry on a large scale. The first of these is soil. For those who have a farm or other land, and who only wish to add poultry to their other stock or to improve and increase their stock of poultry, the only thing to be done is to make the best of the soil upon which they live. We can give much encouragement to those who live even upon heavy soils, generally believed to be most prejudicial to poultry. We have had experience of keeping feathered stock on various kinds of land, and believe that with good food sensibly administered, and dry well ventilated houses, poultry can be made to thrive on almost any soil. When, however, land is to be selected for poultry farming



its choice is of the greatest importance, and that quite as much for the sake of the land itself as of the birds. The good done to some soils by being heavily manured by poultry is wonderful, and fortunately these soils are those on which poultry thrive best, and on which the greatest number can be kept in health.

The first principle in any large poultry establishment should be to combine the cultivation of vegetables with that of birds. Light soils, especially newly reclaimed sands, are made extraordinarily productive by the sweepings of poultry houses. We have known the whole character of a poor kitchen garden changed by being thus continually dressed. In such soils, too, grass is wonderfully improved in the same way; it seems that the coarser grasses are destroyed, while all the finer ones are brought to perfection. Some years ago we divided out a rubbishy neglected piece of ground newly planted with fruit trees into poultry yards. Nothing was sown in the ground, and for a while the yards looked bare and untidy. An abundant crop of weeds and rough grass soon came up; this we had mown occasionally, and took care that no yard was overstocked with tenants so as to be trampled down. Now and then, too, the birds were removed for a few days and some seeds from the hayloft scattered about, but there was never any kind of systematic sowing of the ground. In three years the turf was the admiration of all who saw it, and in a bad grass country was closer and finer than any that could well be found in the meadows. We know, too, of another instance in the same soil where the vegetable garden and poultry yard have with great advantage been transposed, as the latter had been over-populated and was becoming tainted. Our idea is, that success in keeping poultry on a large scale depends mainly on its judicious combination with the growing of vegetables and cultivation of grass, and upon the proper distribution of the birds over a considerable tract, so as to manure the ground sufficiently without its being tainted; at the same time the chance of epidemics among the stock is greatly lessened by their constant change to fresh quarters. The refuse and superfluous vegetables, too, should supply a considerable item of the food. We lately translated some extracts from a French poultry book with the express purpose of pointing this out, and of calling attention to a fact much forgotten among us, that the natural food of gallinaceous birds consists to a great degree of vegetables.

When land is to be selected with the express purpose of poultry keeping, there is, in our opinion, nothing better than unreclaimed heath and grass; if there is low underwood about it, and here and there trees, so much the better. From our experience of the effect of poultry on such ground we feel confident that those who possess it, and would have it gradually reclaimed and enriched, would be wise to let it rent free, of course under certain conditions, for a few years, for such a purpose. To begin with, it should not be broken up, but the roughest heather and grass cut and cleared away; parts where there are any trees had better be left for cover. Heath, when once cut, if poultry are put upon it, soon begins to decline, and grass gradually takes its place after one season; but the whole should be trenched over and the birds removed for a while, good grass will then rapidly spring up in the manner we have described. Climate and position form another question, and intimately connected; we believe the latter to be of more importance than the former. We should certainly not advise anyone to attempt keeping a large stock of poultry in a climate known to be at once cold and wet. Certain breeds may be kept with profit in cold dry counties, and we are strongly inclined to think that almost all breeds will thrive in warm moist situations. It is generally believed that a very dry atmosphere suits poultry; we are persuaded it does not. We have only to look at the poor stunted fowls, layers it is true of good eggs, to be seen everywhere on the shores of the Mediterranean, to learn that such a climate is not favourable for their development; on the other hand we have often been struck with the fine birds bred in some of the wet south-western counties of Scotland. Again, we have seldom found our own stock reared during very hot summers turn out well, and we hear on all sides in the south of England of chickens doing and growing particularly well through this hitherto very wet summer.

The position of yards relatively to hills, woods, walls, or any kind of shelter is of the utmost importance. Those who live in hilly countries, or where woods and bare land alternate, know well the extraordinary difference of temperature there often is between places only a few hundred yards apart. This is specially the case in spring, when the winds are cold and the sun is hot. The southern side of a hill or wood, even of a bank or hedge, is then often through mid-day like the south of France. An hour's bask daily in such a place will make six weeks' difference in the time a hen begins to lay, and that at a time of year when eggs

fetch three times as much as they do in the summer. The birds, too, do not consume nearly so much food in a sheltered position. One of the great ends of food is to supply heat to the system, and if this is supplied from another source so much less food is required.

Our advice, then, generally to one looking out for land on which to keep poultry largely is to seek for light sand or chalk, with some wood, if possible, not in too dry a region, and as far as may be well sheltered. Poultry hate wind, and if they are not sheltered from cold blasts by natural features of the country, must be artificially protected by hedges, banks, or paling.—C.

## THE POULTRY CLUB.

A COMMITTEE meeting of the Poultry Club was held on Wed-

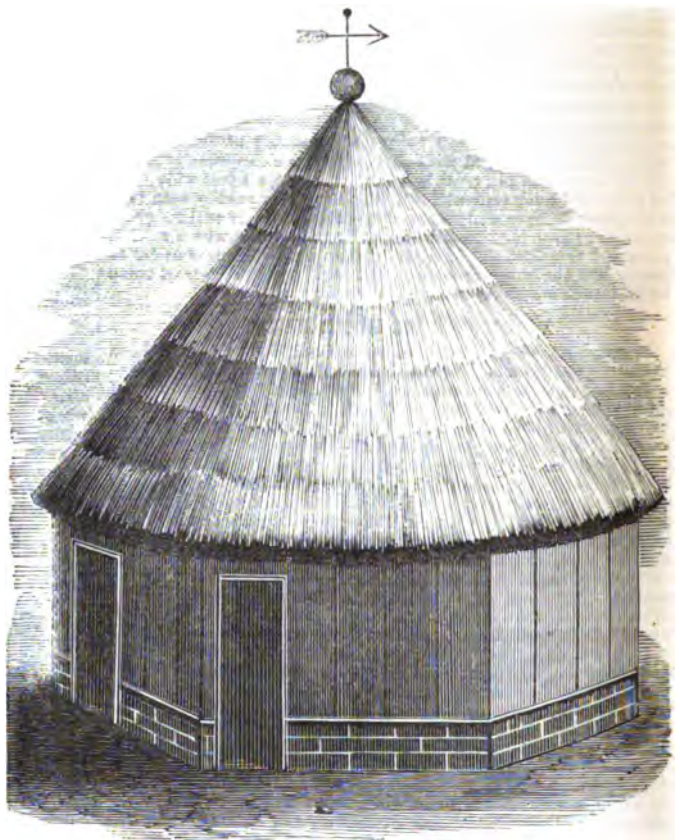


Fig. 7.

Elevation of hexagonal shed as shelter for stock (see page 56).

nesday, July 2nd, at the Charing Cross Hotel; present the Hon. and Rev. F. G. Dutton, A. Darby, S. Mathew, and O. E. Cresswell. Hon. Sec. The following were elected members:—T. W. Aners, 42, High Street, Clapham; W. E. Fitt, Wyke, Winchester; C. Naylor, Newtown, Montgomeryshire; Leonard Pilkington, Vernon Lodge, Gateacre, Liverpool; Butler Smith, The Grove, Cropwell Butler, Bingham, Notts; and associate member, J. Castleman Brown, Arnold Hill, Maidstone.

Monsieur Eugène Mennechet of Amiens, President of the International Jury for Poultry at the Paris Exhibition, was elected an honorary member of the Club.

A complaint having been made against Mr. John E. Claydon of Shadyoak, Offerton, Stockport, an associate member of the Club, of his not having paid for some Houdan hens which he had purchased, the Secretary was instructed to ask for an explanation, and no answer having been returned to the Secretary's letter, the Committee decided to expel Mr. Claydon from the Club.

The following names of members and associate members who had failed to pay their subscription were struck off the list of the Club under Rule 4:—F. Beaumont, Ipswich; S. Field, Thame; J. H. D. Jenkinson, Sheffield; Rev. G. W. Joyce, Farnham; G. Mumford, Weymouth; J. F. Newall, Littleborough; A. Ogden, Ashton-under-Lyne; F. Perrin, Peckham; A. H. Schofield, Littleborough; and J. Thomas, New Kent Road.

The question of the disqualification of Mr. G. Burnell's Malay cock at the Shrewsbury Show was further considered, and it was resolved, that "After consideration of a letter from Mr. E. Hewitt

on the subject of Mr. G. Burnell's Malay cock disqualified by the Committee of the Shrewsbury Show, the Committee of the Poultry Club came to the conclusion that the case does not appear to be one calling for their censure."

Various other businesses were transacted, and a number of letters addressed to the Hon. Sec. on subjects connected with the Club were read.

### DISEASED SKIN IN BELGIAN CANARIES.

This subject is one of importance to others besides a correspondent, J. P. Allan. Irritability of the skin of Canaries is caused in various ways, sometimes through an overheated temperature, or the bird having been stuffed and made too fat with egg, cake, and sugar, which produces a gross condition of the system, with sometimes a tendency to a scurfy skin if the birds have been kept without proper green food and fed freely upon hempseed at a season of the year when it is not of such service to them as in the depth of winter. Cages, too, are frequently infested with parasites which trouble the birds at night time, robbing them of both blood and rest. The above all tend to encourage a bad state of the blood—a sure precursor to irritation of the skin. If there be any scurf upon the necks of birds very slightly anoint the bare places with lard, and at the expiration of a week wash any infected bird with soap and warm water, well rinsing the soap from the feathers, and drying-off before a fire. For birds kept in a close atmosphere a wash now and then is a preventive against disease. Whenever the operation is performed use care; a soft shaving brush or piece of old flannel are best to wash with. We use a camel's-hair shaving brush for the purpose. If birds are over-fat diet them for a few days with rapeseed, lettuce, or the seed of the same will act as a slight purgative, and assist to carry off any ill-humour the birds may have contracted. Do not give the birds groundsel; at this season of the year it would have been beneficial had it been well ripened with the sun. Cleanliness in every respect should be studied, not only in the birds' seed being freed from dust, but the cage bottom should be kept continually sanded, fresh water given daily, and a bath at least three times a week. Fresh water daily is a most important adjunct in keeping birds in good health. Where several birds are kept in a cage, and all have access to one drinking vessel, the water soon becomes stale and impure, which may easily be found out by testing it with a sniff of the nose when the water in the vessel has been neglected being replenished for a day or so. This matter ought to convince anyone keeping birds that unless the pent-up prisoners are well attended to they cannot be expected to enjoy health and favour their owners with their song. A rusty nail in the fountain, and a piece of salt to peck at, will materially assist in purifying the blood.—GEORGE J. BARNESBY.

### VARIETIES.

PROBABLY at the Kilburn Show the attention of some of our readers was directed to a machine for fattening poultry. It is a huge circular thing which turns on a pivot, and all round it are tiers of receptacles for chickens, into the crops of which food is periodically pumped. We saw it, or a similar machine, at the Paris Exhibition; but there the tenants of the tiny pens were wooden cocks and hens. Not so, unfortunately, at Kilburn, where a number of miserable living birds were cruelly confined in little boxes in which they could not move, and with both legs chained to the floor. A placard was placed over it to the effect that it was sold to a well-known English lady, and we trust not to be used in so barbarous a fashion. We understand that the attention of the Society for the Prevention of Cruelty to Animals has since been very properly called to the matter.

WE have received the schedule of prizes offered for competition at the sixth Exhibition of the Caledonian Apian and Entomological Society, to be held in connection with the Highland and Agricultural Society's Show at Perth on 29th of July and three following days. A silver cup and thirty silver and bronze medals are provided for competition in the various classes for honey, hives, and wax, comestibles, &c. Special prizes are also afforded for supers of honey, and for the best table display the production of one apiary in 1879. The Society enjoys influential patronage, and articles may be sent for competition from all parts of the United Kingdom. Mr. R. J. Bennett, 50, Gordon Street, Glasgow, is the Honorary Secretary of the Society.

THE Committee of the British Bee-keepers' Association was held in the board-room of the Society for Prevention of Cruelty to Animals on July 9th. The Judges were appointed as follows: Hives—Rev. J. D. Glennie, Messrs. Tegetmeier, Freeman, Ward, and Newman; bees and foreign honey classes—Rev. F. T. Scott, Messrs. Carr and Desborough; English honey—Hon. and Rev. C. Fielding, Capt. Kettlewell, and Messrs. Bostock, Harding, and Symington; miscellaneous classes—Rev. J. L. Sisson, Messrs. Fletcher, Jackson, Stewart, and Tite; British bee flora—Dr. Hogg, Messrs. Ingram and Barron; and bee-driving competition—Messrs. Carr, Desborough, and Tite. The Countess Brownlow is expected to distribute prizes on the last day of the Show at Kensington,

Thursday, July 24th. On Tuesday, July 22nd, the conversazione will be held at 6 P.M.; and on Wednesday the General Meeting at the same hour, Lord Aberdare being expected to preside. A letter was read from Mr. Cowan (unavoidably absent) recommending some alterations in the instructions to the Judges at the next bee-driving competition. A discussion followed, which ended in Mr. Cheshire moving and Rev. E. Bartrum seconding, "That the bees as they arrive shall be set at liberty, and kept in the place appointed by the Committee; and that the time of the competition shall be reckoned from the moment the competitor, at the direction of the Judges, leaves the tent to fetch his bees." Carried unanimously. The Hon. Secretary trusts all competitors will have their bees on the ground not later than ten o'clock on the morning of the day of the competition. In connection with Kensington Show, arrangements are being made for a microscopical exhibition of prepared objects and apicultural curiosities generally. The possessors of such would much aid the Committee by their loan during the time of the Exhibition.

"SOME time ago," writes a correspondent from the Isle of Man, "I had a letter from a brother in Batavia, Illinois, North America, wherein he says, 'I should keep some bees here only there are too many kept just in this neighbourhood. One man alone, not a quarter of a mile from here, has 150 hives, and there are several others in town with twenty to one hundred each. Of course, honey in flowers is very scarce, so the bees go for all the ripe fruit they can find, after the manner of wasps with you. There are acres and acres of grapes grown here, and the bees make sad havoc with the fruit. The owners of the vineyards devotedly pray for the extermination of the bees and their owners. The grapes sell for 1½d. per pound. They pump the combs twice a week, and take the honey by the ton.'"

THE collection exhibited by the Lawes Chemical Manure Company, at the late Show of the Royal Agricultural Society at Kilburn, was interesting, as showing how all parts of the world are laid under contribution to provide the three essential elements of plant food—viz., phosphoric acid, nitrogen, and potash. Amongst phosphates we noticed Curaçao, Charleston, Canadian, and Spanish. The first named is very rich in trisilicic phosphate, containing 85 to 87 per cent., and is of great use, especially for making a concentrated superphosphate for shipment when dissolved by means of sulphuric acid; it contains about 20 per cent. soluble phosphoric acid, and it will thus be seen is one of the richest phosphates known. The Charleston phosphate is the one most extensively used, however, and from this the great bulk of mineral superphosphate used in this country is made. This phosphate is taken out of seven or eight fathoms of water, and is full of animal remains which have for centuries been accumulating. Messrs. Lawes selected for exhibition a number of very fine specimens, and amongst them, in addition to the fossilised vertebrae of animals we noticed sharks' teeth, shells, a large piece of fossilised wood, and a splendid and quite perfect tooth of the mastodon, which in itself is sufficient to show for how many ages this store of phosphate has been laid up for the British farmer of to-day, who finds it more and more indispensable every year, and without which it would be impossible that his crops could be grown. Messrs. Lawes had also a collection of the various nitrogenous substances, including nitrate of soda and sulphate of ammonia, dried blood, azotine, &c. They also showed bones finely and coarsely ground, and looking at the photographs of Messrs. Lawes' works, where last year nearly 50,000 tons of manure were made, we were impressed with the magnitude and importance of the industry created by John Bennet Lawes, who in his experimental fields at Rothamstead has done so much to advance the interests of scientific agriculture.

### BEE-KEEPING MADE PUBLIC.

I HAVE read with much interest the proceedings of the British Bee-keepers' Association as reported by you from time to time, but as a practical man I see a practicable mode of teaching modern bee-keeping by that Society and its affiliated societies completely overlooked. I may be mistaken, if so my ventilating the subject can still do no harm.

At the end of the work entitled "The Apiary," by Mr. Alfred Neighbour, is a picture representing an apiary as erected many years ago in the Zoological Gardens, since removed. That apiary is gone, and I have never heard of another in an English public park. Turning to foreign lands let me briefly tell you what is being done to popularise bee-keeping, but except in one instance all effort being directed to teach the modern bar-frame working. In Paris for many years past the great bee king, Professor Hamet has had the privilege of keeping an apiary in the Luxembourg Gardens, where twice a week he gave, and still gives, open air demonstrations, but as he is wedded to the straw skep system his is the one instance referred to above. But the Central Society of insectology embracing apiculture were not content with this, and have recently acquired a large area of ground in the park of Montsouris, where they are establishing a large apiary, of which Mr. Hamet is the director. Let us hope he will include a few bar-

framers in his stock. I am glad to say he is experimenting with "Root" machine foundation which I had the pleasure of presenting him.

In France there is a large and increasing school of mobilists, and in one of the favourite Parisian resorts—viz., The Jardin d'Acclimatation, this earnest school of modern bee thought has established an apiary, which I visited with the liveliest feelings of pleasure last year when delegate for apiculture to the Paris Exhibition. A sufficiently large area of ground is enclosed by a semicircular barricade about 8½ feet high. Within, placed on pedestals are about a dozen hives far enough from the public for the bees to come and go, and be operated upon, without any great danger. A roomy operating house has been provided, where is the professor's library tools, &c. The professor is none other than a lady, who twice a week gives public lessons gratis. I had the pleasure of an introduction to her, and found in her an enthusiast for the proper culture of our pets upon bar-frame principles. I have had the pleasure of supplying her also with foundation; and as best proof of what she thinks of it after trial I may just say she has influenced her friends to send me orders. In the north of France the Society of the Somme have an apiary of their own where weekly demonstrations are given. The Corporation of Amiens, I believe, gave the site free.

Passing southward a new Society has been started at Chartres, and they are organising a public apiary, where they intend all systems to have a fair trial. Bordeaux has long been a nursery for mobilists, and the Society of the Gironde has its public apiary and open air demonstrations. Passing into Italy we find in Turin an apiary has been established in the public park. In Milan I think there is the same. The Municipality of Bologna, recognising the vast importance apiculture is to the trade and well-being of the nation, have proceeded in a thoroughly practical manner to do what has been done elsewhere by private effort. They have placed in the public garden of Bologna an apiary built in Châlet style, of larch, white and red wood being pleasingly worked together. Here, also, public demonstrations are given, and the on-looking peasant is brought to see that the time for the sulphur pit is past, and more profit to be gained by the rational modes of working he has actually seen.

Returning to England and its Bee-keepers' Association I would respectfully suggest that the Association take steps to follow the examples I have adduced. A little nook in that lovely subtropical garden at Battersea Park would surely be granted for such an object. Not London parks alone should have their apiaries, but the noble parks attached to English towns by munificent donors. The lessons learned by a visit to a park of an ordinary workman are many it is true; but place there that most wonderful of all peep shows an observatory hive, and his attention is arrested. For the future he sees that each flower is life to the insect world not merely, fine colour and perfume to please man.

If the British Bee-keepers' Association do right they will try this plan. Once begun they would find the stock would cost little; for one would present a hive, another an extractor, and so on, and amongst the bee enthusiasts of England would be found many able and willing to give two hours in the week to publicly explain in a popular manner the modern systems of management.—ARTHUR TODD, *Algeria*.

### THE SEASON AND BEES.

MY bees, about which I wrote to you last week, have come to an untimely end. They were then as I thought in the greatest prosperity. I told you they were killing some drones; but in the last day or two I have seen some working bees dead, and this evening, on raising the hive, I find it as light as a feather compared to what it was three weeks ago, and the bees nearly all dead. I suppose the large number of bees, being unable to get any honey from the flowers, have been obliged to subsist on the honey in the hive, which soon disappeared. I fear it will turn out a very bad year for bees, more especially for swarms.—*AFIS, Clifton*.

### SWALLOWS VERSUS BEES.

SUNDAY morning (July 7th) was very warm and the bees were as busy as could be. I and a friend were watching them, when we noticed that a swallow was evidently catching the bees and carrying them to its young in a barn about 80 yards away. There were three young ones in the nest, which I killed and opened, and found that they were all full of bees' legs and wings. I have read in a work on bees that swallows are not to be reckoned among the enemies of bees, but my observations, which are supported by those of several friends, tend to an opposite conclusion.—*H. SIMPSON*.

### OUR LETTER BOX.

PLOUGHING BY ELECTRICITY (*Devonian*).—You have been rightly informed that experiments on this mode of land culture have been made in France. In another column we publish a communication on the subject

which has been sent to us by an esteemed correspondent, who has given some attention to this novelty in ploughing. Your second question as to whether it is likely to answer or not can only be proved by further experiment. We can remember the time when railways were pronounced impracticable and the electric telegraph impossible.

HENS LAYING IN COOP (R.).—Keep them in the coop until their chickens are old enough to take care of themselves.

SMALL DUCKS' EGGS (*Marian*).—It is not so usual for Ducks to lay small eggs as it is for common fowls to do so. It is often caused by the food being too nourishing.

FREEDING POULTRY (*J. A. D., and Others*).—No quantity can be stated as a standard. If any food is left in their troughs they are overfed. On the other hand poultry are often underfed. They are given, as an American states in a note before us, just enough food to keep them alive and to lay an egg now and then. It is the extra food that a bird has over and above what is required to sustain life that makes the profit in the shape of eggs or flesh. Fowls should have as much food as they eat with apparent relish and no more. A little maize may be given daily in conjunction with other kinds of food. A poor lean bird will eat more than one that is in good condition, and a Cochon or Dorking will consume more than a Bantam, just as a Short-horn cow will eat more than a Kerry, or a cart horse more than a small pony. These illustrations will show how impossible it is for anyone to answer such questions as "How much food should each fowl have a day?" or "How much corn is required by six fowls in a week?"

PERCHES FOR FOWLS (*B. B.*).—If they are placed 80 inches from the ground they are as effectual, so far as the comfort of the birds is concerned, as if they were 20 feet high.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.						Rain.
1879.	Barom. at 3 p. and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		In sun.	On grass.	
July.		Dry.	Wet.			Max.	Min.	Max.	Min.			
We. 9	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	deg.	deg.	
Th. 10	29.462	58.5	52.5	N.W.	56.3	63.5	59.0	58.8	46.7	0.00	0.00	
Fri. 11	29.751	59.0	54.8	N.W.	56.0	64.7	51.3	116.6	47.5	—	—	
Sat. 12	29.973	51.8	50.6	W.	55.8	64.6	45.6	110.0	41.6	—	—	
Sun 13	29.904	57.3	52.6	S.W.	56.0	68.9	52.7	93.0	46.3	0.10	0.10	
Sun 13	29.516	58.8	55.3	S.W.	56.1	66.7	50.5	116.6	47.0	0.75	0.75	
Mo. 14	29.631	56.5	55.0	W.	56.6	64.7	53.4	108.4	51.6	0.94	—	
Tu. 15	29.761	57.1	54.9	N.	56.6	67.1	54.5	108.3	53.3	—	—	
Means	29.685	56.7	53.6		56.3	64.9	51.9	108.8	48.6	1.67	—	

### REMARKS.

9th.—Showery, very windy morning; fine afternoon and evening, with slight shower about 9 P.M.

10th.—Fair day; no rain, but at times overcast; clear fine evening.

11th.—Very bright and fine in early morning; cool and cloudy most of the day, but a little sunshine at intervals.

12th.—Overcast misty morning; rain began about noon and fell at intervals during the rest of the day.

13th.—Fair both morning and evening; showery in afternoon.

14th.—Cool, cloudy, and showery.

15th.—Rather more pleasant day; bright sunshine at intervals; few spots of rain about noon.

Temperature still very low, especially the maxima, there not being a single instance of its rising to 70° during the week. Dull, damp, and gloomy.—*G. J. SYMONS*.

### COVENT GARDEN MARKET.—JULY 16.

No alteration this week; trade quieter. Fruit prospects still desponding.

#### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	0 0 to 0 0	Melons.....	each	3 0 to 6 0
Apricots.....	dozen	2 0 3 6	Nectarines.....	dozen	0 0 0 0
Cherries.....	box	2 0 3 6	Oranges.....	½ 100	4 0 12 0
Chestnuts.....	bushel	13 0 16 0	Peaches.....	dozen	6 0 9 0
Currants.....	½ sieve	0 0 0 0	Pears, Kitchen.....	dozen	0 0 0 0
Black.....	½ sieve	0 0 0 0	dessert.....	dozen	0 0 0 0
Figs.....	dozen	6 0 12 0	Pine Apples.....	½ 76	3 0 5 0
Filberts.....	½ lb.	0 9 1 0	Plums.....	½ sieve	0 0 0 0
Cobs.....	½ lb.	0 9 1 0	Raspberries.....	½ lb.	0 0 0 0
Gooseberries.....	½ sieve	2 3 2 6	Strawberries.....	½ lb.	0 6 1 6
Grapes, hothouse.....	½ lb.	2 0 0 0	Walnuts.....	bushel	0 0 0 0
Lemons.....	½ 100	4 0 8 0	ditto.....	½ 100	0 0 0 0

#### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	dozen	2 0 to 4 0	Mushrooms.....	pottle	1 0 to 2 0
Asparagus.....	bundle	2 0 6 0	Mustard & Cress.....	punnet	0 2 0 0
Beans, Kidney.....	½ 100	1 0 1 6	Onions.....	bushel	3 6 4 0
Beet, Red.....	dozen	1 0 2 0	pickling.....	quart	0 4 0 0
Broccoli.....	bundle	0 9 1 6	Parsley.....	doz. bunches	2 6 0 0
Brussels Sprouts.....	½ sieve	0 0 0 0	Parsnips.....	dozen	0 0 0 0
Cabbage.....	dozen	1 0 2 0	Pea.....	quart	3 0 3 6
Carrots.....	bunch	0 4 0 8	Potatoes, new.....	½ lb.	0 1 0 2
Cap-sicums.....	½ 100	1 6 2 0	Potatoes.....	bushel	3 6 4 6
Cauliflowers.....	dozen	3 0 6 0	Kidney.....	bushel	4 0 5 0
Celery.....	bundle	1 6 2 0	Radishes.....	doz. bunches	0 0 0 0
Coleworts.....	doz. bunches	3 0 4 0	Rhubarb.....	bundle	0 0 0 6
Cucumbers.....	each	0 4 1 0	Salsify.....	bundle	0 9 1 6
Endive.....	dozen	1 0 2 0	Scorzonera.....	bundle	1 6 0 0
Fennel.....	bunch	0 3 0 0	Seakale.....	basket	0 0 0 0
Garlic.....	½ lb.	0 6 0 0	Shallots.....	½ lb.	0 3 0 0
Herbs.....	bunch	0 2 0 0	Spinach.....	bushel	2 6 4 0
Leeks.....	bunch	0 2 0 4	Turnips.....	bunch	0 6 0 8



## WEEKLY CALENDAR.

Day of Month	Day of Week	JULY 24—30, 1879.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.							
24	TH	Birmingham Rose Show. Aberdeen Summer Show.	72.6	51.7	62.1	4 13	7 59	10 38	9 35	5	6 15	205
25	F		73.9	49.4	61.9	4 15	7 58	0 a 1	9 54	6	6 16	206
26	S	West Leicester Show.	73.7	50.3	62.0	4 16	7 56	1 26	10 17	7	6 16	207
27	SUN	7 SUNDAY AFTER TRINITY.	74.9	50.7	62.8	4 18	7 55	2 51	10 48	8	6 16	208
28	M		76.4	50.8	63.6	4 19	7 53	4 12	11 31	9	6 16	209
29	TU		75.5	49.9	62.7	4 21	7 52	5 22	noon.	10	6 14	210
30	W	Lichfield Horticultural Exhibition.	75.2	50.2	62.7	4 22	7 50	6 16	0 30	11	6 12	211

From observations taken near London during forty-three years, the average day temperature of the week is 74.6°; and its night temperature 50.4°.

## THE SETTING OF GRAPES.



HERE are many causes at work to prevent Vines setting their fruit freely which we do not always discover until too late to insure success. Everything connected with their culture must be well done, and done at the right time. See that your borders are well drained, that the Vines are growing in fresh and suitable soil, and that they have been regularly and liberally supplied with water at all times. These are most important points in the successful culture of the Grape Vine. After a house is cleared of fruit the Vines should be well syringed every day, and watered freely to retain the foliage in good health as long as possible in order to well ripen the wood. We have frequently observed strong-grown young Vines with the wood imperfectly ripened set their fruit badly, and no aid in fertilisation would secure a good set.

To grow a bunch of Grapes well, say for exhibition purposes, it is necessary that it be well finished. A point of great importance is, that the berries be large for the variety and uniform in size, and if more attention were paid to the setting of Grapes in our cloudy climate equal-sized berries would be more frequently seen than they are at present. The Muscat Hamburg, one of our finest black Grapes, often sets badly when forced early as well as Mrs. Pince and other varieties, and is always more liable to fail in this respect than when grown later. We have always found the Muscat Hamburg to set and colour better when grown on the Hamburg stock. It is a great advantage to have the trellises of vineries so arranged that a stroke with the hand on the trellis will make the whole vibrate. A practice we always adopt when the Vines are in bloom is to give the trellis a few smart strokes with the hand every day about twelve o'clock, which causes the dispersion of the pollen. With shy-setting varieties, such as the Canon Hall Muscat, the Black Morocco, &c., while the temperature is high and the atmosphere dry, we once a day sharply tap each bunch with the finger against the upper part of the fruit stalks, avoiding the too prevalent custom of drawing the hand over the bunches, which often causes that unsightly appearance on the skin of the Grape which is called rust. We have always found it a safe rule when our Vines are in bloom to allow the temperature to be somewhat higher than at other stages of their growth, and also drier as circumstances will permit.

We have here a three-quarter span-roofed house in which Vines are planted back and front. The back border contains Black Hamburg planted inside, while the front border Vines are planted outside, and comprise the varieties Black Hamburg, Golden Champion, Muscat Hamburg, Muscat of Alexandria, Madresfield Court, and Mrs. Pince. To keep this vinery as dry as desirable while in flower would encourage red spider, as the varieties flower in the order named and occupy three weeks or more. Free-setting varieties, such as Black Hamburg, Frontignans, Alicantes, &c., should have a temperature of about 65° to 70° at night, rising to 80° during the day with fire heat, and allow-

ing the temperature to rise to 85°, not exceeding 90° with sun heat. The shy-setting varieties, such as the Canon Hall Muscat, the Muscat of Alexandria, the Black Morocco and others, require a higher temperature than the free-setting varieties. We succeed in setting the "shy" varieties in a night temperature of 72° or 73°, and in bright weather allowing the thermometer to rise to 90° or 95° with ventilation, always having the top ventilators open about half an inch at night. Such high night temperatures are not necessary later in the season when the days are long and sun shine strong.—JOHN LLOYD JONES, *The Mount, Congleton.*

## BURFORD LODGE.

THE seat of Sir Trevor Lawrence, Bart., M.P., near Dorking, Surrey, has an interest to gardeners on account of the grand collection of Orchids grown there, a collection which is being constantly increased. As there are two routes by which this garden can be reached from London, and a mistake might readily be committed by gardeners out for a holiday whereby much time might be lost, we may note for the information of all such that from the West End the London and Brighton is the quickest route, booking from Victoria station. From the City or the East End travelling by the South-Eastern is the most expeditious, booking either from Charing Cross or Cannon Street stations. Dorking is the nearest station to book to on the first-mentioned line, Box Hill on the latter. Either station is from ten to fifteen minutes' walk from the gardens at Burford Lodge. There, under the guidance of Mr. Spyers, Sir Trevor's Orchid-grower, the admirer of these aristocratic members of the floral world will for the time being find himself in enchanted ground. This is one of the finest collections of Orchids to be found in any private garden, consequently the notes which follow can only be taken as pointing out a few of the more particular specimens which attract attention when inspecting this grand collection.

Commencing with the cool Orchid house, we found in this structure a collection of the many species of this interesting section which are now in cultivation. *Odontoglossum Alexandræ*, *O. Pescatorei*, *O. Roezli*, *O. vexillarium*, *O. Phalænopsis*, *O. pulchellum*, and others of this genus were represented by plants the picture of health, a large specimen of *O. vexillarium* being a prominent object. Mr. Spyers considers that this species requires heat to increase the depth of colour in the flowers. The plants are standing on what we may be allowed to call a pseudo-stage of sparred woodwork, the real stage being a few inches underneath covered with spar or gravel kept wet. Besides the *Odontoglossums* noted above as being in flower a fine specimen of the rare *Restrepia antennifera* had several flowers open. The curiously pretty *Masdevallia bella*, growing in raft baskets suspended from near the roof, had each a few blooms pushed through the bottoms of the baskets. *Oncidium incurvum* was noted as likely to prove useful to gardeners requiring cut flowers. Several plants of the brilliant *Epidendrum vitellinum* were flowering profusely in one corner close to the glass. In the next division we found the rare *Epidendrum Wallisii* in flower. This is a very distinct and

curiously coloured species. An extraordinary specimen of the hybrid *Calanthe Dominiana* had seven or eight spikes of its beautifully shaded lilac-purple flowers open. Growing in a long narrow basket the deliciously scented *Aërides japonicum* was producing spikes freely. *Bolles* and the nearly allied *Pescatoreas* were in flower, the most noteworthy of which were a good plant of *Bollea celestis*, *B. Lawrenciana* just opening its first flower, and a specimen of the rare *Pescatorea Kiabochorum*. Planted in a deep teak basket and suspended near the roof was a healthy plant of *Vanda cærulea* with two strong growths. Climbing up a piece of a Tree Fern's stem was a large piece of the sweet *Zygopetalum maxillare*. Potted in loam were grand specimens of *Cymbidium eburneum* and *C. Mastersii* as healthy as *Geraniums*. *Cœlogyne barbata* was represented by a large mass growing and rooting quite freely. Of the large specimen *Lælia*, *Cattleyas*, &c., in this division we have only space to say that all were splendid.

Passing on into the *Cattleya* house we found in bloom *Dendrobium sulcatum*, distinct in its shade of yellow. There were also in flower varieties of *Cattleya Mossiae*, *C. maxima*, *C. amethystoglossa*, and *Lælia purpurata*. *Cattleya gigas* is here represented by perhaps the largest plant in the country. Mr. Spyers does not agree with those who think a little sun is appreciated by this magnificent genus; the *Cattleyas* are consequently shaded. Returning and passing into a large stove, the centre of which was filled with Palms, &c., the first plant to attract attention was an extraordinary specimen of *Vanda Russelliana*; then came into view three specimen *Cypripediums*—*C. Dominianum* with some thirteen spikes, each with four of the curiously tailed flowers developed; *C. Sedeni* coming on with sixteen spikes, and *C. Parishii* with nine large spikes. This latter was particularly fine. In a corner of the house was a panful of the chaste *C. nævium*, many of the spikes bearing each three blooms. The curiously bearded and hinged flowers of *Bolbophyllum barbigerrum* attracted attention in passing. The equally curiously fringed and large flowers of *Brassavola Digbyana* are seen on a specimen growing on a block and hung near the roof. Some strong pieces of *Dendrobium Wardianum* were making their growths in the same position, with many other species too numerous to mention. The Butterfly *Oncidium* was represented in this house by a particularly fine variety.

Passing along a short and narrow corridor, also devoted to Orchids, a square little structure in which cool species were growing stopped our further progress in this direction. A remarkable mass of the travelling *Odontoglossum Londeboroughianum* growing on a sparsely teak raft was the most noticeable plant. We were next shown into a house in which, amongst others, were flowering *Aërides quinquevulnerum*, *Dendrobium M'Carthyi* on a block, *Oncidium intermedium* (very distinct), and *Utricularia Endresii* with numerous spikes and the first flower open. An extra fine specimen of *Oncidium ampliatum majus* was thriving. This structure also contained the *Phalænopsis*.

Opening from there is a lean-to, in which was a large plant of the extremely rare *Cœlogyne Parishii*, some large *Angraecums* in vigorous health, *Saccolabiums*, and Pitcher-plants. In a frame behind are growing some large and healthy masses of *Disa grandiflora*, various hardy *Cypripediums*, &c. In a vinery are large panfuls of *Pleionea*, specimen *Anguloa*, a large plant of *Vanda teres* growing freely, but which has not yet flowered at Burford Lodge, besides other plants. In a lean-to near this vinery are growing the *Masdevallias*. These are in great variety and the plants in robust health, some of the specimens being large. Many of the species have a few flowers open, *Veitchiana*, *Davisi*, and *Harryana* being the most striking and distinct. In a prominent position is a plant of the grand *Oncidium macranthum* with a fine spike fully developed. This is a beautiful Orchid, and succeeds with the coolest treatment.

We had now seen all the Burford collection. Seen all! and in the course of a two-hours visit! Not so! We felt that we could go over the same ground again and again, and every time find something fresh and interesting which had previously escaped our notice; but time and train, to somewhat alter the old saying, wait for no man, so after a glance at a range of new houses in course of construction for growing more Orchids and other plants, noting in passing that the glass was cut round in order to carry the water down the centre of the panes, and a further precaution taken against drip in having each astragal grooved just underneath the glass, we had to hurry off to the station thoroughly satisfied

with our visit, as we are certain all visitors must be who inspect this remarkable collection.—R. B. R.

### SEASONABLE HINTS FOR UNSEASONABLE WEATHER.

AS a matter of course much has been written lately in this and other journals under the happy delusion that sooner or later we should have some summer weather; but as I am one of those who, however much we may dislike things as they are, think it best to acknowledge accomplished facts at the earliest moment and shape our policy in accordance with them, instead of with what used to be, or with what we wished and hoped would be, I think it necessary to remind your readers that we are near the end of July; and that though we are now convinced that we can have something like wintry weather when the days are longest, there is no warrant for supposing that summer will come with the autumn equinox. On the contrary, we know from experience of former years, though there is no chance to verify it now, that the sun is already losing its power, and there is an additional unwelcome thought in the fact that it has done little or nothing to warm the soil, so that whenever the air becomes cold there is comparatively little warmth in the ground to ward off frost. Instead, therefore, of longing for summer, which if it comes to-morrow cannot in the ordinary course of things last more than a month, I should advise your readers to prepare for winter: for although I do not attempt to foretell what sort of winter may be in store for us, I can promise this much, that should it be only half as severe as the one so lately experienced we must not expect to get off with such slight damages. The sun is the best hardening factor, a hot summer is the best preparative for a severe winter, a growing autumn is the worst.

Any woody growth made after this time will under no circumstances be of any permanent use. There may be cases where it would not be advisable to remove them at once or prevent them appearing; but our principal endeavour should be to make the best of that already formed, to concentrate the energies of the plant as much as possible to the proper development of the earliest buds, for these need all the care that can be bestowed on them, and at present the outlook for next year is anything but satisfactory.

In general I am no advocate for extreme pinching and stopping, but in a season like this we must alter our tactics considerably both indoors and out; and although I still protest against the common practice of taking half the best foliage off a plant at one time, even if that plant is only a Currant bush, I would under present circumstances advise the early removal of the most immature growth from all woody plants and the prevention of extension from this time, while for very choice specimens it might be even advisable to remove many of the later-formed buds from the axils with the point of a knife. Endeavour to keep the earliest-formed growth clean, and give it all the light possible as far as next year's welfare is concerned; but Vines which are bearing fruit must be treated very carefully for the sake of the present crop. To remove foliage is to check circulation, to prevent swelling and colouring, to cause shanking, and spoil flavour; hence the necessity of preventing a superabundance of growth by timely stopping and disbudding.

In a previous paper I have insisted on the necessity of keeping up the temperature of late vineries by artificial means so long as the natural means fail, and as it is so important I again draw attention to it. In ordinary seasons our vineries without fire heat and with abundance of air rise to 90° or 100°, as indicated by a shaded thermometer day after day; and although they may go down in the morning at sunrise to 60° or lower, it is only for a very short time, and if the average for the twenty-four hours were made out it would probably often reach between 75° and 80°. I do not advise attempting to reach such an average by fire heat unless we could have a corresponding amount of light; but I do advise that something be done towards it, so as to secure the ripening of the earliest formed wood, or we may have to mourn the loss of crops indoors next year as well as out. Since the flowers were set I have aimed at a minimum temperature of 65°, giving a rise of 5° as soon as possible in the morning. A little air has been given during the day in dull weather, and when the sun chanced to appear we were afraid to make as much use of it as usual, as the growth being mostly made without sunlight there was a danger of scorching; but we took advantage of



such occasions to give plenty of air and thus get the growth a little hardened. My minimum from the time of starting till the flowers were set was 55° as usual. At the first sign of colouring air will be given abundantly; for if this process is hurried it can never be perfect. I hope to see hard brown wood, bright green leaves of great thickness, and perfectly coloured fruit at the same time, then all will promise well for another year.

I am afraid there is a great deal too much damping and syringing done during the present season. Mr. Luckhurst told us of an amateur who took his ventilators away and locked them up during his absence. There is no doubt in my mind that if the same thing had been done with water-pots and syringes this season, in many cases there would have been better fruit and healthier foliage with less mildew and aerial roots. I have nothing to say against damping the floor of a house at closing time, if it is dry; but I can say much against damping it when it is not dry, and also against having leaves and fruit dripping wet half their time.

For the present I can only hint that as fruit which is damped over a good deal is not usually well flavoured, I have no doubt the deficiency is caused by the prevention of natural exhalation. I suppose it will be allowed that there are exhalations from fruits; and if these are checked there must be a check in the circulating system, and the fruit cannot appropriate the matter necessary for its perfect maturation.—WM. TAYLOR.

### BANKSIAN ROSES.

SEVEN years ago I planted some white and yellow Banksian Roses against the north side of a lofty building in Sussex. They have grown so freely that they are now upwards of 40 feet high, yet till the present year branches and leaves have been my only reward; now, however, they have a few clusters of flowers, proving the truth of what has been told despondent correspondents, that these old favourites do not usually flower in a young state when growing upon a north aspect. I was induced to plant these Roses from having seen some very old trees of the same kind blooming freely in a similar position, and gladly turned the fact to account in order to add what will some day prove a charming feature to a side of the house that is usually somewhat dull-looking and consequently unattractive.—EDWARD LUCKHURST.

### YOUNG VERSUS OLD STRAWBERRY PLANTS.

It has often been stated that young Strawberry plants not more than three or four years old are the best and heaviest fruiters, and that the plants should never be kept after that age. This may be the rule in some places, but there are exceptions. Here our Strawberry plants will hardly produce fruit until they are two and three years old, and after that they bear most abundantly. We have to-day (July 2nd) gathered forty-eight quarts of capital fruit from plants which cannot be less than ten or twelve years old; but those planted last year and the season before are only bearing very sparingly. The old plants never make much leaf-growth, but produce an enormous quantity of flower, which yields much finer fruit than many persons would expect were they to judge by the age of the plants.

Old plantations are very liable to become infested with weeds, but of course this can always be prevented. Our Strawberries are mostly growing in a stiff half-clayey soil. A little short dung is forked in about their roots every autumn, and in spring the surface of the ground is thinly covered with half-decayed stable manure, which no doubt affords the plants nourishment and at the same time keeps the fruit from coming in contact with the soil.—J. MUIR, *Margam*.

### THE PROPOSED NATIONAL CHRYSANTHEMUM SHOW.

I AM glad to see from Mr. Elliott's notes on page 28 that all growers of this lovely flower have not lost sight of the proposed coming contest. The time for stopping the shoots is over; and very shortly the crown and terminal bud will have to be considered, as success depends greatly upon this point and choosing the right bud for producing the best flowers according to the variety. From now will be an anxious time for the grower, for he must watch lest his flowers are overgrown, ragged, and coarse on the one hand, or undersized and puny on the other.

Respecting the proposed contest, it is desirable that it be known if anything is coming to a practical issue. The matter cannot be brought forward at a more appropriate time than the present, when all cultivators of the Chrysanthemum will watch from day to day the various stages of development of their plants.

The Birmingham Society have issued their schedule, and probably many growers were somewhat startled to find the solitary subscription from the Liverpool growers alone announced. Northern growers have certainly given proof of their earnestness by the practical step they have taken in remitting their portion of the contest prize, and thus appear ready to stage their blooms against those of other growers in a national display. Why do not Mr. Ollerhead and his friends send their portion of the subscription? Perhaps they do not intend to come to Birmingham; if so, we can only conclude they lack earnestness in the matter.

I should be glad to know if the £20 cup that the liberal Kingston Society were getting up will be open to northern growers at a moderate entrance fee, or if the guinea for entrance is still required; if so it will look like shutting out distant exhibitors, so that the cup can remain within a certain radius of London. Growers from the west should also come forward and take part in the coming contest. Bristol growers have only to send their portion of the contest money to entitle them to enter the lists at Birmingham. Growers on contributing to the prize fund from all localities can compete.

Horticulturalists were left to judge of the conduct of the Liverpool growers when the challenge was first thrown out; it may now be fairly asked, Who has taken the most practical step towards promoting a friendly meeting of northern and southern Chrysanthemum cultivators?—A MIDLAND GROWER.

### NATIONAL ROSE SOCIETY'S PROVINCIAL SHOW, MANCHESTER.—JULY 19TH.

NOTWITHSTANDING the postponement of the Show from the 12th to the 19th inst. the date, late as it was, was still too early for those for whom the Show was primarily instituted; for northern growers were as a rule quite unable to stage blooms in superior condition, and the prizes consequently went, with one or two exceptions, to those who may be termed southern growers. The morning of the Exhibition opened with a grey drizzling rain, and before noon it came down in torrents, very similar to thunderstorms. Fortunately the Show was held in a glass building, much more suitable under the circumstances than a tent, and the long lines of Roses were pleasingly relieved by hanging creepers and the numerous decorative plants tastefully arranged between many of the boxes by the Curator of the Royal Botanic Gardens, Mr. Bruce Findlay.

Devonshire, Herefordshire, Lancashire, Somersetshire, Wiltshire, Essex, Nottinghamshire, Lincolnshire, Cambridgeshire, Cheshire, Hertfordshire, and Oxfordshire all contributed to this excellent display. Dark Roses preponderated; but dark Roses are favourites, and this year the want of sunshine has brought them out in their richest colours, while light Hybrid Perpetuals are, in the majority of cases, found wanting in finish and symmetry. Le Havre, Duke of Edinburgh, and Alfred K. Williams were exhibited in almost every collection in the highest excellence. The high average quality of the blooms and the numbers staged made up the best Rose show of the season (unless it was Hereford, which also claims that honour), but the excessive rains, we fear, must have told seriously on the finances; yet, notwithstanding the continual downpour, from one to four o'clock there was a very fair attendance, and the Show appeared to be more keenly appreciated by the visitors than are similar shows in the south.

The schedule consisted of sixteen classes, five for nurserymen and six for amateurs, the remainder being open classes. In addition to these the prize of £5 offered by G. P. Hawtreys, Esq., at the recent Crystal Palace Show and not competed for on that occasion, was transferred to the Manchester portion of the schedule. The conditions of this prize are "three trusses of any new seedling Rose not yet in commerce. A ground plant of the variety to be also shown." The prize was won by Messrs. G. Paul & Son with their Hybrid Perpetual Duke of Teck—a very vivid scarlet. The plant removed from the open ground was strong and robust and of good habit.

NURSERYMEN'S CLASSES.—For seventy-two distinct, single trusses, four collections were staged, the awards going in the following order. First, Mr. B. R. Cant, Colchester; second, Messrs. Cranston & Co., Hereford; third, Messrs. Paul & Son, The Old Nurseries, Cheshunt; and fourth, Messrs. Keynes & Co., Salisbury. All these stands contained some really magnificent blooms, many of them surpassing in both size and quality any which have been exhibited at the metropolitan exhibitions this year, and it must have been a most arduous task for the Judges to decide on the

relative merits of the collections. By many observers it was thought that Messrs. Paul & Son should have had a higher position. Mr. Cant's first-prize collection consisted of the following—Etienne Levet, Madame Hippolyte Jamain, John Hopper, François Michelin, Beauty of Waltham, Louise Peyronny, Duke of Edinburgh, La France, Madame Charles Wood, Marguerite de St. Amand, Marie Baumann (the largest bloom of its kind in the Show), Marquise de Castellane (very fine indeed), Princess Beatrice, Louis Van Houtte, Thomas Mills (exquisite), Maurice Bernardin, Marquise de Mortemart, Comtesse d'Oxford, Dupuy-Jamain, Madame Nachury, Général Jacqueminot, Capitaine Christy, Prince Camille de Rohan, Abel Grand, Antoine Ducher, Hippolyte Jamain, François Louvat, Gloire de Vitry, Le Havre (a most beautiful bright flower), Devoniensis, Mrs. Rivers, Xavier Olibo, Pitord, Madame Cambacères, Baronne de Rothschild, Madame C. Joigneaux, Mons. Noman, Charles Lefebvre, Madame Marie Cointet, Madame Prosper Langier, Madame Lacharme, Mrs. Baker, Alfred Colomb, Ferdinand de Lesseps, Souvenir d'un Ami, Madame Ferdinand Jamin, Souvenir d'Elise, Catherine Mermet, Horace Vernet, Duchesse de Vallombrosa, Madame Victor Verdier, Maréchal Niel, Exposition de Brie, Niphotos, Star of Waltham, Fisher Holmes, Mons. E. Y. Teas, Nardy Frères, Abel Carrière, Ville de Lyon, Dr. Andry, Madame Caillot, Marie Rady, Duc de Wellington, and Madame Sophie Fropot. Messrs. Cranston & Co.'s collection was very fresh, but the blooms were somewhat smaller than those staged by Messrs. Paul & Son, who exhibited grand examples of Charles Lefebvre, Duke of Edinburgh, Marie Baumann, Général Jacqueminot, Marie Finger, Le Havre, Horace Vernet, and A. K. Williams. Messrs. Keynes' blooms had apparently suffered very much from heavy rains.

For forty-eight triplets Messrs. Paul & Son were deservedly awarded the premier prize with grand and massive blooms of François Michelin, Duke of Edinburgh, splendid; Marguerite Brassac, very fine; Duchesse de Vallombrosa, Sultan of Zanzibar, Centifolia Rosea, Niphotos, Madame Charles Wood, Madame Hippolyte Jamain, Nardy Frères, Narcisse, Horace Vernet, Charles Darwin, Madame Nachury, Princess Beatrice, Beauty of Waltham, Marie Rady, La France, Mrs. G. Paul, Marie Finger, Abel Carrière, Souvenir de Malmaison, Marie Baumann, grand; Etienne Levet, good; Monsieur Gabriel Tournier, Alfred K. Williams, Madame Lacharme, the finest bloom of this variety in the Show; Monsieur E. Y. Teas, Madame Prosper Langier, Monsieur Noman, Madame Victor Verdier, Marguerite de St. Amand, Charles Lefebvre, Star of Waltham, Général Jacqueminot, Comtesse de Serenye, a seedling, Henri Ledechaux, La Duchesse de Morny, Mrs. Laxton, Baronne de Rothschild, Camille Bernardin, Magna Charta, very good; Dr. Andry, Abel Grand, and Cheshunt Hybrid. Mr. Cant was placed second, staging amongst others excellent blooms of Fisher Holmes, Marie Finger, Alfred K. Williams, Marie Baumann, Devoniensis, Duke of Edinburgh, Marguerite de St. Amand, Souvenir d'Elise, Marie Rady, and Souvenir d'un Ami. Messrs. Keynes & Co. occupied the third position. Messrs. Cranston and Co. also exhibited in this class.

In the class for twenty-four triplets Mr. B. R. Cant secured the foremost position with good blooms of Duke of Edinburgh, François Michelin, Baronne de Rothschild, Marie Rady, Marguerite de St. Amand, Marie Baumann, Madame Nachury, Etienne Levet, Niphotos, Mdlle. Marie Cointet, Horace Vernet, Exposition de Brie, Souvenir d'Elise, Madame Prosper Langier, Duchesse de Vallombrosa, very clean and perfect; Ferdinand de Lesseps, Fisher Holmes, Monsieur Noman, Duc de Wellington, La France, Marquise de Castellane, and Souvenir d'un Ami. Messrs. Paul & Son were a very close second with Sultan of Zanzibar, Marie Baumann, Duc de Rohan, Devoniensis, Mrs. G. Paul, Centifolia Rosea (Mr. Paul as a rule exhibits this flower in better condition than it is generally met with), Ferdinand de Lesseps, Beauty of Waltham, Marguerite de St. Amand, Charles Lefebvre, Madame Nachury, Madame Lacharme, Nardy Frères, Horace Vernet, François Michelin, Souvenir de la Malmaison, Duke of Teck, Duchesse de Vallombrosa, Marie Baumann, La France, Dr. Andry, Monsieur Gabriel Tournier, and E. Y. Teas.

Mr. Prince, 14, Market Street, Oxford, well won the first position in the class for twenty-four singles with Xavier Olibo, Baronne de Rothschild, Marie Baumann, La France, François Michelin, Duchesse de Vallombrosa, Horace Vernet, very good; Madame Sophie Fropot, Général Jacqueminot, Mons. Gabriel Tournier, Ferdinand de Lesseps, Madame Marie Verdier, Marquise de Mortemart, Maréchal Niel, Alfred Colomb, Marquise de Castellane, Mdlle. Marie Cointet, Hippolyte Jamain, Alba Rosea, Souvenir d'un Ami, Sombreuil and Auguste Rigotard. Messrs. Dickson and Sons, Newtown Nurseries, Chester, were second; third honours falling to Mr. Cooling, Bath. Messrs. Dickson & Co.'s collection was very good, evenly set up, and very fresh, but smaller in size than the first-prize collection. There were four competitors in this class.

Mr. B. R. Cant secured the premier award for twelve Teas or Noisettes with a grand collection comprising Souvenir d'Elise, Madame Bravy or Alba Rosea, Souvenir d'un Ami, Devoniensis, Moiré, Maréchal Niel, Niphotos, Jean Ducher (the colour peculiar to this Rose at the back of each petal was more striking than we

have ever noticed it before, every petal being streaked with a deep reddish-brown), Madame Willermoz, Marie Van Houtte, Catherine Mermet, and Caroline Kuster. Messrs. Paul & Son occupied the second position with Narcisse, Cheshunt Hybrid, a fine bloom of Adrienne Christophe, Niphotos, Marie Van Houtte, Souvenir d'un Ami, Bouquet d'Or, exquisite; Anna Ollivier, Alba Rosea, and Madame Willermoz. Mr. Prince was third, having in his collection good blooms of Rachel, Sombreuil, and Alba Rosea.

**AMATEURS' CLASSES.**—The prize collections contributed by amateurs were as meritorious as those of the nurserymen. Mr. Baker and Mr. Jowitt both exhibited in the larger classes in first-rate style, and between them there was a very close and keen competition. In the class for thirty-six distinct Mr. Jowitt held the premier position with Alfred Colomb, Madame Hippolyte Jamain, Beauty of Waltham, Capitaine Christy, Duke of Edinburgh, Marquise de Castellane, Madame Lacharme, Mdlle. Eugénie Verdier, Sir Garnet Wolseley, La France, Dr. Andry, Marguerite de St. Amand, Prince Arthur, Marquise de Mortemart, Marguerite Brassac, Mdlle. Marie Cointet, Duc de Wellington, Marie Rady, Edouard Morra, Vicomte Vigier, Madame C. Crapet, Prince Camille de Rohan, Dupuy-Jamain, Comtesse de Chabillant, François Michelin, Horace Vernet, Camille Bernardin, Madame Bravy, Le Havre, very good; Madame Nachury, Comtesse de Serenye, and Marie Baumann. Mr. Baker was placed second with a good collection, but one or two of the blooms had lost their colour. The Rev. Canon Hole was third, having in his collection good blooms of Charles Lefebvre, Homère, Souvenir d'Elise, La France, Duke of Edinburgh, and Anna Ollivier. Mr. Mayo, Oxford, was awarded the fourth prize.

Six competitors entered the lists for twenty-four singles, and in this class Mr. Baker turned the tables on his friendly rival Mr. Jowitt, the latter occupying the second position. The collections of both gentlemen were grand. Mr. Baker's comprised Camille Bernardin, Alfred Colomb, Lord Macaulay, Centifolia Rosea, Avocat Duvalier, a very bright Rose of the Maréchal Vaillant type; Madame Hippolyte Jamain, Charles Lefebvre, François Michelin, Le Havre, Marquise de Mortemart, Jean Liabaud, Marie Baumann, Baronne de Rothschild, Etienne Levet, Madame Victor Verdier, Abel Carrière, Magna Charta, Mons. E. Y. Teas, Marie Rady, La France, Alfred K. Williams, Duke of Edinburgh, Marquise de Castellane, and Beauty of Waltham. Mr. Jowitt also staged grand blooms. Arthur G. Soames, Esq., Irnham Park, Bourne, was a very close third, staging a box of fine Roses, but somewhat lacking variety in colour. The Rev. Canon Hole received the fourth prize.

In the class for twelve blooms there were nine collections. J. L. Curtis, Esq., Chatteris, Cambs, was placed first with a stand comprising La France, Le Havre, Madame Victor Verdier, Madame Hippolyte Jamain, Duc de Rohan, Charles Lefebvre, Baronne de Rothschild, Auguste Rigotard, Olivier Delhomme, Duc de Wellington, Duchesse de Caylus, and Comtesse d'Oxford. Mr. Alfred Evans, Marston, Oxford, was awarded the second prize, having in his collection a very fine Maréchal Niel. The Rev. J. H. Pemberton, Romford, third.

Ten collections were staged for six blooms, and the majority of them were very good. Mr. E. Mawley, Croxford, obtained, as he well deserved, the first place with fine blooms of Baronne de Rothschild, Marie Baumann, Madame Victor Verdier, Madame Hippolyte Jamain, Paul Verdier, and Etienne Levet. Mr. J. L. Curtis and the Rev. E. D. Fellowes, Royston Rectory, were second and third respectively.

In the class for six Roses grown within a district of twenty miles of Manchester there were several very poor collections, the best coming from W. F. Palfrey, Esq., Millington, near Altrincham; Mr. James Brown, Heaton Mersey, obtained the second prize; and Mr. John Devonport, Bollington Mills, Altrincham, the third.

Six boxes of Teas, twelve single blooms, were staged in the amateurs' class, and the awards fell respectively to the Rev. Canon Hole, the Rev. E. D. Fellowes, and Mr. Jowitt in the order of the names, all exhibiting well considering the most unpropitious season.

**OPEN CLASSES.**—Of new Roses in commerce previous to 1876 there were three collections staged, Messrs. Paul & Son being far ahead of other exhibitors with the following collection:—Constantine Fretiakoff, Marchioness of Exeter, Mons. G. Tournier, Magna Charta, Souvenir d'Auguste Riviere, Marquise de Munnais, Alfred K. Williams, fine; Edouard Pynaert, Mrs. Laxton, Madame Gabriel Luizet, Charles Darwin, and Madame de Montchauveau. Mr. Cant was placed second, but the majority of the blooms were very small. Three collections were staged. The other was so inferior that the Judges withheld the prize. There were only two competitors in the class for twelve blooms of Capitaine Christy, both of which fell considerably below the usual standard of this popular Rose, and the first prize was withheld, the second prize being awarded to Messrs. Cranston & Co. for a collection of small flowers scarcely sufficiently expanded, and the third prize to Messrs. Paul & Son for blooms of good substance but considerably overblown. For twelve single trusses of Alfred Colomb there were four collections staged, and the awards

fall to Mr. Baker, Messrs. Paul & Son, and Mr. Cant in the order of their names. Mr. Mayo was the only exhibitor of twelve blooms of *Marcchal Niel*, and these merited a second award.

**MISCELLANEOUS.**—Mr. Samuel Barlow, Stakehill House, Middleton, staged a most beautiful and charming collection of about 150 blooms of Persian *Ranunculuses*, comprising from forty to fifty varieties, most of which were of the most perfect symmetry, the various colours ranging from deep black to pure white, scarlet, yellow, and carmine; others were tipped like *Picotees*, and the whole collection commanded great admiration. Some of the varieties in this magnificent collection were purchased by Mr. Barlow from the collection of Mr. Carey Tyso. Messrs. Dickson & Robins, 12, Old Millgate, exhibited an extensive collection of herbaceous plants; Messrs. Dickson, Brown, & Tait collections of cut Roses and *Paeonies*; and Mr. T. Stadd, Cross Street, Manchester, a variety of bouquets, baskets of flowers, also wreaths, the whole of which were much admired.

### LIQUID MANURE TO FORCED STRAWBERRIES.

IN answer to "A FOREMAN's" inquiries as to the merits of applying liquid manure water to forced Strawberries, I will gladly give him my experience. I never give my Strawberries liquid manure till I see the fruit is swelling. My opinion is, the less liquid manure the better up till that period, as it causes the soil in the pots to go sour; neither do I use saucers to hold water, for I think the sooner the water passes through the soil the better it is for the plant. It is not the liquid manure that throws up the flower spike, but the compost in which the plants are potted. I always pot mine in good loam three parts, and one part old cowdung.—THOMAS PITTS.

"A FOREMAN," on page 22, asks for the views of cultivators on watering Strawberries for forcing with liquid manure. After long practice and many experiments I have proved to my own satisfaction that liquid manure is not necessary until after the fruit is set, provided the plants have been properly potted in suitable soil. Every year my practice is to stack up some rather strong turfy loam with alternate layers of fresh horse droppings. This with the turf often causes slight fermentation, and the result is a valuable compost heap. This is chopped down as wanted, and mixed with lighter soil if needed by certain plants; but for Strawberries the only addition is half a peck of bone dust to each barrowful of soil. This is used in a moderately moist state—neither wet nor dry, and the plants are potted very firmly. Strawberries thus grown are not benefited by liquid manure until the heavy crop of fruit commences swelling; it is then given until the first fruits show colour, and no longer. The bone dust is a valuable addition to the soil, and for quickly swelling the fruit nitrate of soda, about a quarter of an ounce to a gallon of water, is excellent. No stimulant acts more promptly than this, hence its value in Strawberry forcing where much is sought to be effected in a little time.—AN OLD GROWER.

### A RUN TO THE WEST—OKEFORD FITZPAINE.

OR rather should I not say in this terrible season a voyage to the west? for there was wind enough to fill the sails of any ship and water enough to drown one; but I had promised to go to Torquay, and the pleasure of going there was enhanced in anticipation by the opportunity it afforded me of paying another visit to my dear old friend Mr. Radclyffe at Okeford Fitzpaine. This is always a day of great pleasure to me, although I now see that time and suffering are evidently marking their hands on my good friend, but whose heart is as warm as ever, and, although long past the threescore years and ten, is as ardent in his love for the Rose and as keen in all that pertains to good gardening as ever he was.

As I have more than once said, Mr. Radclyffe not only has no advantages in his position, but labours under many serious disadvantages. His garden is open to nearly every wind that blows, as he himself says. It is open to the south until you get to Portland, to the east until you get to London, and to the south-west until you get to Gibraltar, while the soil is light and poor, and yet withal that he manages to grow Roses in a style which would not discredit those who enjoy the favourable conditions of a good soil and fine situation.

I have so often written about his Roses that I will not repeat my oft-told tale, especially as, owing to the season, they were not so advanced as to enable me to see them in their full beauty. One thing I was particularly struck with: In front of his house he has a row of *Madame Clemence Joigneux* as

standards. They are budded on the *Manetti*; the shoot is then trained up as a single stem. When it is about 4 feet high the top is pinched out, and it is then allowed to form a head as in an ordinary budded standard. Nothing could have been more vigorous than these Roses or cleaner than their bright polished green stems. There are not many of the new Roses to be found here. I was, however, most interested in the Peach and Nectarine trees, especially as my old neighbour Mr. Luckhurst has written about the extensive blistering of the leaves, from which my trees have suffered much. The trees at Okeford Fitzpaine are very numerous, especially when the space of wall on which they grow is taken into account. There are 120 Peach and Nectarine trees; they are neither cordon nor fan-shaped, but are made to accommodate themselves to their situation, and are all treated on the short-spur system. On a small tree of Prince of Wales I counted twenty-two fruits, on one of Royal Ascot twelve; while Early York, Magdala, Dr. Hogg, Noblesse, the Nectarine Peach, Rivers' Royal, Golden Frogmore (a gift from Mr. Turner), Royal George, and other kinds had all more or less fruit on them, while the foliage was clean and healthy; and this not owing, as will be seen, to any favouring conditions of soil or climate, but to constant care and supervision and high cultivation. I am not sufficiently myself up in the subject to decide on the point, but certainly in all aspects and with all varieties there was less blister to be seen than I could show on one tree. My friend once used to go in strongly for Strawberries, but he has slackened in his culture and has now confined himself to Rivers' Eliza. Recurring again to Roses, Mr. Radclyffe, like a good many others, has formed a very decided opinion on the merits of the seedling Briar in preference to the *Manetti*, of which he has been so strong an advocate.

While all bush fruit are abundant the larger kinds are an almost complete failure. There are no Apples nor Plums and but very few Pears. One tree of *Duchesse d'Angoulême* in Mr. Radclyffe's garden, about 20 feet high, a gift in bygone days from Mr. C. Turner, was one sheet of bloom, and yet there was not a Pear on it; and the orchards all around bore witness to the fact that the promise of an abundant crop had been utterly destroyed by the cold and cheerless spring. By-the-by I was just in time to see the garden, for on the following morning a terrific gale blew through it and knocked the Roses to "smithereens," as he wrote me. It was with feelings of thankfulness at having once again been permitted to see my valued friend that I left him to cast myself on the stormy sea of the Somerset and Dorset line, for improved although it be yet I found to my cost that it was not to be trusted, though it is said to run in connection with the South-Western.—D., Deal.

### WEST KENT HORTICULTURAL SOCIETY.

JULY 19TH.

THIS prosperous Society held its annual Exhibition last Saturday in the grounds of the Misses Ellis at Widmore, Bickley, an extremely pleasant site for an excellent and successful Show. It must be very gratifying to the Committee of the Society, and equally so to all interested in its welfare, to record a balance of £125 to the credit of the Society, and the fact speaks well both for the management and the supporters.

A great number of classes were provided, the most important of which were fairly represented, although, of course, there were a few unavoidable blanks. Cut Roses were in many instances excellently shown, and the exhibitors were numerous, but the most remarkable feature was the large number of miscellaneous groups from nurserymen and amateurs, and the success of the Exhibition was in no small degree due to these gentlemen.

There were only two competitors in the open class for twelve stove or greenhouse plants, and although there were in each collection a few good specimens, yet the majority were very indifferent. Mr. J. Mumford, gardener to J. Scott, jun., Elmstead, was placed first, and was followed by Messrs. Feed & Son, Norbury Vineyard Nurseries, Lower Streatham; and we cannot avoid observing that this was an instance of erroneous judging, which was somewhat unaccountable, for the latter collection was undoubtedly the best, including an unusually fine *Ixora salicifolia*, a good *I. coccinea superba*, a vigorous *Allamanda grandiflora*, and a fair *Rondeletia speciosa*, while there was not one plant so bad as Mr. Mumford's *Dracophyllum gracile* and *Imantophyllum minimum*, which were sufficient to damage any collection. It was a mistake to offer prizes for so many as twelve flowering plants thus late in the season, six would have been a more suitable number. In the amateurs' class for six Mr. J. Archer, gardener to F. Heritage, Esq., Orpington, staged the only collection and secured the first prize. The plants were of medium quality.

In the open class for nine foliage plants Mr. J. Archer, the only

exhibitor, obtained the first prize for a collection of even and well-grown specimens that was highly creditable. The most noticeable were *Croton pictus*, *C. variegatus*, *Maranta roseo-picta*, *Dieffenbachia Bausei*, and *Cissus discolor*, the foliage healthy and finely coloured. There were two competitors in the corresponding amateurs' class for six plants, and the premier position was secured by Mr. A. Flowers, gardener to J. Phillips, Esq., Elmstead, for vigorous specimens, among which *Sanchezia nobilis variegata*, *Pandanus Veitchii*, and *Maranta splendida* were extremely good. Mr. W. Gammon, gardener to C. Boosey, Esq., Bickley, followed with healthy plants, the beautiful *Ficus Parcellii* being in excellent condition.

Pelargoniums were not very numerous, the Show and Fancy varieties being poorly represented; but in the open class for six Zonals Mr. Henry Coppin, The Rose Nursery, Shirley, Croydon, staged some large and good plants, and easily obtained the premier award. Mr. H. Cole, gardener to A. Mitchell, Esq., Elmstead, and Mr. Oliver Real, gardener to J. Withers, Esq., Bickley, were placed in the order named, their plants being small but bright. Mr. H. Coppin was the only exhibitor of six tricolor varieties, the chief prize being most deservedly awarded him for extremely even and well-coloured specimens of *Proteus*, *William Sandy*, *Miss Farren*, and *Sophia Dumaresque*, &c. Two collections of six *Gloxinias* were exhibited, Mr. George Bridger, gardener to J. B. Alston, Esq., Bickley, being first with good plants, the flowers of which were large and finely coloured. Mr. F. Maynard, gardener to J. Whitehead, Esq., Bickley, was second with rather small and indifferently flowered plants.

*Caladiums* were well shown by Mr. Archer in the amateurs' class for six plants in 12-inch pots. The foliage was well coloured and the plants vigorous, so far surpassing those exhibited by the five other competitors that the first prize was secured. Mr. W. Gammon was second, and his plants were also good, but the varieties were inferior and the colour dull. Mr. J. Bridger was third with rather irregular specimens. Ornamental-foliage *Begonias* was another class for plants that were numerous and in good condition generally. The prizes were obtained by Mr. H. Sawyer, gardener to W. Sentance, Esq., Bickley, Mr. W. Gammon, and Mr. A. Flowers in the order named. Hardy Ferns were noticeable for their freshness and vigour, particularly in the first-prize lot of six from Mr. Gammon, which included *Lastreas*, *Athyriums*, and *Osmunda regalis* of medium size but good. There were a few *Dracenas* and exotic Ferns that do not call for special notice.

**ROSES.**—The exhibits were more numerous than we had expected to see, and the quality of the blooms was generally good, particularly those from Messrs. Paul & Son of Cheshunt, who carried off the honours in the three open classes for forty-eight triplets, twenty-four singles and twelve blooms of one variety respectively. Among their forty-eight blooms there were some very fine and fresh; for instance, *Beauty of Waltham*, *Marquise de Castellane*, *Madame Victor Verdier*, *Abel Grand*, *Camille Bernardin*, Mrs. George Paul, *Charles Lefebvre*, *Duke of Edinburgh*, *Cheshunt Hybrid*, *Etienne Levet*, *Souvenir de la Malmaison*, *Marie Baumann*, *La France*, *Mons. E. Y. Teas*, *Baronne de Rothschild*, *Avocat Duvivier*, *Alfred Colomb*, *Mons. Noman*, *Madame Lacharme*, and *Madame Hippolyte Jamain*. Messrs. J. Laing & Co. were second with fair blooms, one of *Beauty of Waltham* being extremely fine. Messrs. T. Bunyard & Sons, the Nurseries, Maidstone, followed with small but fresh blooms of good varieties. In this class there were six competitors. Messrs. Pauls' twenty-four were even and fine, the varieties the same as those included in the forty-eight. Mr. J. W. Todman, Eltham, followed in this class with a good collection; and E. Mawley, Esq., Lucknow House, Addiscombe, Croydon, was placed third with bright and fresh blooms but small. Other exhibitors in this class were Messrs. Laing, Coppin, Piper, and Bunyard. The premier collection from Messrs. Paul of twelve blooms of one variety was extremely good, the *Marie Baumann* being in superb condition in colour, form, and substance. Messrs. J. Laing & Co. were the second with the same variety well represented. Messrs. J. Bunyard & Sons were third with *François Michelin* somewhat full.

In the amateurs' classes Captain Christy, Buckhurst Lodge, Westerham, staged a good first collection of twenty-four, in which the best were Dr. Andry, Dupuy-Jamain, Maurice Bernardin, La France, and Abel Grand. Mr. A. Gibson, gardener to F. Burnaby-Atkins, Esq., Sevenoaks, followed with blooms of very medium quality, except Dupuy-Jamain and John Hopper, which were in good form. The collections of twelve distinct, single blooms, were rather poor. Mr. H. Cole was first, followed by the Rev. J. M. Fuller, The Vicarage, Bexley, and Mr. T. Gearing. The blooms in the classes for six distinct and of one variety do not merit special notice.

Cut flowers and table decorations were fairly well shown, particularly the latter, several of which were very tasteful, although it was generally admitted that a mistake was made in awarding the first prize for a table decoration 10 feet by 5, as the second-prize arrangement was more simple, less crowded, and yet very artistic in design. Mr. Cannell, Swanley, Kent, exhibited cut blooms of *Pelargoniums*, *Verbenas*, *Finks*, *Pæonies*, &c., in their customary excellence.

**MISCELLANEOUS GROUPS.**—These were, as we have already remarked, very numerous; and the Society very justly notified their thanks for the valuable assistance afforded by awarding extra prizes to all the exhibitors. Messrs. Veitch & Sons, Chelsea, sent a large and handsome group of choice plants, comprising *Orchids* and foliage plants, *Sarracenias*, &c., also eight boxes of cut *Roses*, very fresh and good. Mr. B. S. Williams, Upper Holloway, had an extensive collection of *Crotons*, *Palms*, *Ixoras*, *Orchids*, &c., very tastefully and lightly arranged. Mr. John Wills, Onslow Crescent, sent a number of handsome foliage plants in which many of Mr. Bause's fine productions were very prominent. The group was, as usual, highly artistic in arrangement. Messrs. John Laing & Co., Forest Hill, exhibited a fine group of foliage plants and *Tuberous Begonias*. Outside the tents was a large circular group of annuals from Messrs. Carter & Co. of High Holborn and Forest Hill, which attracted considerable attention from the visitors. Mr. J. W. Todmorden, nurseryman, Eltham, sent a group of *Coniferous plants*. Mr. James Wingfield, florist, Widmore Hill, Bromley, a miscellaneous collection. Messrs. Peed and Son, Lower Streatham, had a group of small *Berries*; and Mr. J. Neighbour, gardener to George Wythes, Esq., Bickley, sent a very fine group of *Achimenes*.

Fruit was not abundant, nor was the quality all that could be desired, particularly in the *Grapes*, *Melons*, and *Peaches*. *Strawberries* were in greater numbers and generally well ripened. In the class for thirty fruits of one variety Mr. E. Harris, gardener to G. W. Norman, Esq., Bromley Common, was first with a dish of excellent fruits of *Sir Joseph Paxton*; Mr. J. Fraser, gardener to Mrs. E. L. Betts, Bickley, was second with the same variety; and Mr. G. Tucker, gardener to J. L. Lovibond, Esq., Farnborough, followed with *President*, both rather small. For three dishes of distinct varieties Mr. W. Gammon exhibited excellent fruit, and was awarded the first prize; but it was pointed out to the Judges that only two varieties were shown—viz., *Sir Joseph Paxton* and *President*, and consequently the collection was disqualified. Mr. E. Harris was placed first with small but ripe fruits of *Sir Joseph Paxton*, *Comte de Paris*, and *Keens' Seedling*. Mr. C. Seymour, gardener to C. Duncanson, Esq., Bickley, was second with inferior fruit. Vegetables were not numerous but good; the principal prizetakers were Messrs. Gammon, Archer, Maynard, and Eke. The cottagers' productions were somewhat inferior to previous years.

The exhibits were arranged in four large marquees, and a word of praise is due to the Honorary Secretary, T. A. Mitchell, Esq., for the excellent system adopted. During the afternoon a large and aristocratic company assembled, and much satisfaction was displayed at the success of the Exhibition.

**SLUGS.**—These have been simply innumerable, and have had it pretty much their own way, devouring everything green. I tried dredging soot and lime, but all to no purpose; no sooner did I have these remedies applied than a downpour of rain washed them away and brought out the enemy in all his force again. Sawdust I think is the best, as it does not wash away so easily. Those who trusted in the belief of the severe winter killing slugs will have had their faith pretty much shaken before now I fancy; and as to the birds they, as has been stated by a correspondent, pay more attention to the *Strawberries* and *Cherries* than to the slugs and worms. By the way, are not all slugs carnivorous?—F. BOYES.

### FRUIT PROSPECTS.

**LINCOLNSHIRE.**—Fruit prospects as far as I can see or hear are truly disheartening. On many Pear and Apple trees, notwithstanding the richest promise, nothing is to be seen but leaves. With us amongst other dessert Pears *Marie Louise* blossomed profusely and set abundantly. Soon, however, almost all the clusters perished, and the few that escaped when about the size of a hazel nut became spotted, turned black, and fell off. Apples, though not utterly hopeless, seem in a doubtful state. When about as big as walnuts they became badly grubbed, and for the most part look unhealthy besides, especially *Cellini* and *King of the Pippins*. All the Lord Suffield trees with us are fruitless. On one Apple tree I observed some dark caterpillars; they lay thick within the leaves as in a cradle, all their heads in one direction—towards the sun. They were in a young stage; when disturbed they raised their heads simultaneously.—A. M. B., *Mid-Lincoln*.

**NORTHAMPTONSHIRE.**—Although there was a fine show of bloom on nearly all fruit trees, the prospect of a good yield of fruit is not at all promising. Apple blossom was late, but few trees have any fruit. *Beauty of Kent*, *Cox's Orange Pippin*, *Golden Pippin*, *Hawthornden*, *Holland Pippin*, and a kind

called here American Peach—a large red Apple, in use from August to November, either for table or kitchen—are about the only kinds that have a full crop. Pears were very prolific with bloom, and many of the trees on walls have a good show of fruit, amongst them being Jargonelle, Williams' Bon Chrétien, Beurré Diel, Marie Louise, Beurré Rance, Easter Beurré, and Autumn Bergamot. That useful culinary Pear Catillac has also a good crop. Apricots about half a crop; the trees on a south aspect have suffered severely, nearly half the wood being killed, but on west aspects not a branch is injured. Peach and Nectarine trees have suffered from the effects of the cold winter and spring. Some trees are killed; blister and curl have made those that are left have a very unsightly appearance. Plum blossom was good, but very little fruit has followed. Damsons are not plentiful. Gooseberries a full crop; but Currants, both Black and Red, are only half a crop. Cherries had a fine show of bloom, but black aphides have so affected the trees, especially Morellos, that only a poor show of fruit will be the result. Mulberries have a good crop of fruit. Filberts and Cob Nuts are good, but of Walnuts there are but few. Strawberries showed plenty of bloom, but the continued rains and want of sunshine have damaged the fruit, particularly on old plantations. Young plantations are showing better, but unless we have more favourable weather, and that soon, the Strawberry crop will be a partial failure.—H., *Peterborough*.

**DUMFRIESSHIRE.**—We had a fine display of blossom, but have been greatly disappointed with many of the trees, which now have but a thin sprinkling of fruit. Cherries, with the exception of Morellos, are a poor crop. Plums: the only sort that has a full crop is Victoria. Pears and Apples (on walls) have done best here with a south-west aspect. The varieties of Pears that have a good crop are Jargonelle, Beurré d'Amanlis, Beurré Diel, Chaumontel, Dunmore, Easter Bergamot, and Hesse. The following Apples have a good crop:—Lord Suffield, Cellini, Hawthornden, Old Nonpareil, Manx Codlin, Keswick Codlin, King of Pippins, Golden Pippin, Golden Harvey, Royal Pearmain, and Court Pendu Plat. Gooseberries and Currants are a fine crop, also Raspberries and Strawberries; all that we want now is sun to bring them to maturity. We are never very early here, but this year the crops are fully a month behind any season that I can remember. For days and weeks it has been raining more or less, and the weather has been cold and boisterous. Fruit under glass looks well both as to quantity and quality.—JAMES DICKSON, *Arkleton*.

I AM sorry that "A SURREY PHYSICIAN," "WILTSHIRE RECTOR," and "AMATEUR, Cirencester," gave so bad an account of fruit prospects. Exceptions prove the rule, and I never had so large a crop both of Apples, Pears, and Plums, and also of common fruits, such as Gooseberries, Currants, Strawberries, and Raspberries.

Marie Louise is about my only exception to a good crop in Pears, though some few other sorts, such as Williams' Bon Chrétien, Beurré Superfin, and Beurré Clairgeau as bushes and pyramids are not doing well. Amongst Apples Lord Suffield, Emperor Alexander, Beauty of Kent, Improved Cockpit, Keswick Codlin, Rawlings (local name), Alfriston, Warner's King, and Sturmer Pippin are all in wonderful bearing. Even younger espaliers only three years planted, trained to wires, are bearing well. Amongst Plums Victoria is something wonderful; one tree, only a pruned pyramid, will return me at least a hundredweight of Plums. So, too, on a west wall two trees only three years old are covered from top to bottom. Apricots are a large crop, which I owe to proper wall protection. So, too, I venture to think, my system of pruning is the cause of my success; for though the winter was severe enough to kill the tops of a few unpruned trees in my kitchen garden, even though in front of a row of glass houses, yet owing to constant severe pruning my trees, only planted 6 feet apart each way in some quarters and 6 feet apart in the rows, going down the sides of a small fruit and vegetable garden, have nearly all of them a large proportion of fruit. Close pruning, close planting, protection from north-east winds and also from westerly gales, are the points I aim at, and let some stronger-growing varieties have free scope to grow at the corners. The only Plums not bearing are Transparent Gage and Early Green Gage. Jefferson also is not so large a crop as usual; but all the others are in good bearing.

I have about twenty-five varieties of Strawberries, and all

are in full bearing, the crop larger than any I ever saw. I have the advantage of a light dry soil over a sandy subsoil, and I can dig my garden any day after twenty-four hours without rain, or in ordinary weather at any time; and to this fact of soil, though with the ground sloping the wrong way—*i.e.*, to the north instead of the south, I in a great measure attribute my success.—C. P. PEACH.

## WEST OF ENGLAND ROSE SHOW.

HEREFORD.—JULY 16TH.

"THE rain it raineth every day." Such has been the melancholy experience if not the actual remark of every long-suffering rosarian in this most lachrymose of seasons. Indeed, as a matter of fact it was not until Wednesday, the 16th inst., following on that Black Monday which in many localities will be long remembered by the cruel damage done by winds and rain, that the first faint streak of hope in the shape of the silver lining which is proverbially said to underlie every cloud at last showed itself as the long-delayed welcome harbinger of positively two successive dry, warm, seasonable days!—a phenomenon so absolutely irresistible as to draw together to the ancient city of Hereford, on the occasion of her thirteenth thrice-postponed popular Floralia, decidedly the largest and best contested display of the queen of flowers which at that date had been held either in the metropolis or provinces. Such, at least, was the unanimous verdict of all the savants present save one, the hero of a hundred fights (though not this year at Hereford), who declaring for Norwich had to follow himself with an aspect wiser—as was once said of Lord Thurlow—than any other man could possibly be, into the lobby of an Hibernian minority. So numerous, indeed, were the exhibits in almost every class—Mr. Charles Turner and Mr. A. Soames alone among celebrities not putting in an appearance—that all the faculties of the executive were taxed to their very utmost to find space for them within the statutory time allowed; but sufficient to state on this point, and thus avoid all suspicion of boredom or bombast, that no less than seven magnificent collections of seventy-two varieties were staged in the nurserymen's division, and all of them were excellent. It is somewhat curious to mention *en passant* that in spite of an exceptionally fine day and successful Exhibition, the attendance of the public was not quite up to the average—an unexpected result which the following suppositions may perhaps account for—*viz.*, that only a quasi kind of success was this year to be expected, or that the hard times we all hear so much about and some feel acted as a deterrent element.

In the nurserymen's division, among major and minor constellations, Messrs. Cant, Curtis & Sandford, Davison & Co., W. Griffiths, Keynes & Co., William Lee, and last but certainly not least George Paul & Son, formed a galaxy of talent very rarely seen together. Mr. Cant, who seems to set this unpropitious season at defiance, carried off the first prize for seventy-two varieties (open to the United Kingdom), with remarkably smooth, large, finely coloured blooms of great merit of Comtesse d'Oxford, Louise Peyronny, Reynolds Hole, Mdle. M. D'Ombraïn, Mons. E. Y. Teas, Gloire de Vitry, A. K. Williams (brilliant scarlet), Capitaine Christy, Beauty of Waltham, Madame Nachury, Centifolia Rosea, Sir G. Wolsley, Madame Hippolyte Jamain, Antoine Ducher, Princess Mary of Cambridge, Ferdinand de Lesseps (very grand), Marquise de Castellane, Nardy Frères, Victor Verdier, Maréchal Niel, Star of Waltham, Antoine Mouton, Sénateur Vaisse, Marie Van Houtte (superb) Sultan of Zanzibar, Etienne Levet, Alfred Colomb, Souvenir d'Elise (superb), Camille Bernardin (very good), Mons. Etienne Dupuy, Le Havre, Anna Ollivier, Thomas Mills, Souvenir d'un Ami (grand), Vicomte de Vigier, Princess Beatrice, Duc de Wellington, Pitord, Alice Dureau, Xavier Olibo, Jean Ducher, Annie Wood, Madame Thérèse Levet (splendid), Marie Rady, Elie Morel, Avocat Duvivier, Abel Carrière (fine and useful), Marquise de Mortemart, Dupuy-Jamain, Madame Lacharme, Jean Souperet (grand dark bloom), Catherine Mermet (superb), François Louvat, Rubens, Louis Van Houtte, François Michelin, Madame C. Joigneaux, Fisher Holmes, Duchesse de Vallombrosa, Charles Lefebvre, Anna de Diesbach, Horace Vernet, Duke of Edinburgh, Général Jacqueminot, Mons. Noman, Niphotos, Madame G. Schwartz, Sophie Coquerelle, Exposition de Brie, Baronne de Rothschild, Pierre Notting, and Dr. Andry. Messrs. Cranston & Co. were second, and Messrs. Keynes and Co. third.

Mr. Cant also performed the Herculean task this year of carrying off the first prize in seventy-two varieties, open to nurserymen not residing in Herefordshire, with an equally grand collection, if anything more rich in Teas and dark-coloured Hybrid Perpetual varieties. Especially noticeable was an intensely dark high-centred Reynolds Hole of vivid brightness, great size, and substance, worthy in every way of its genial prototype, delicately fronted by an exquisite bloom of the time-defiant blushing Madame Bravy, and sentimentally flanked by incomparable specimens of Souvenirs d'Elise and d'un Ami, while the finishing touch of contrast was given to perfection by a glorious Duke of Edinburgh of fiery colour and perfect form. It



was a marvellous bit of staging by a cunning old hand! May Birmingham next Thursday produce the like, and may your reporter be there to see it. Messrs. George Paul & Son were second, and Messrs. Curtis, Sandford, & Co. third; Messrs. Keynes & Co. having an extra prize. Both these classes were admirably contested, though in some collections ill effects of weather were apparent.

In thirty-six varieties (three trusses) Messrs. Keynes & Co. had thrown their chief strength, and deservedly took first prize with a splendid collection; second prize Messrs. Cranston & Co.; third prize Messrs. Curtis, Sandford, & Co. In twenty-four varieties Messrs. Cranston, who have barely begun even now to cut from maiden blooms, were placed first, Mr. Cant second, and Messrs. Keynes & Co. third.

In the amateurs' class of thirty-six varieties Mr. R. N. G. Baker was first with a magnificent collection (I cannot describe better than in Mr. Laxton's words at Norwich) of large size, brilliant in colour, of great substance, and very even, to which may be added their retentive freshness. Abel Carrière, Prince Camille de Rohan (marvellous colour), Charles Lefebvre, John Stuart Mill, Madame Sophie Propot (a good novelty), Etienne Levet, Baronne de Rothschild (grand), Thomas Mills, Centifolia Rosea, Dupuy-Jamain, Marquise de Castellane, Camille Bernardin (superb), Magna Charta, Milla, Eugénie Verdier, Comte de Rainband, Marie Rady, Annie Wood, Louis Van Houtte, Madame de Montmartre, Alfred Colomb, La France, Marie Baumann, Marie Van Houtte, Duke of Edinburgh, Mons. François Michelin, Marguerite Brassac, Le Havre, Lord Macaulay (very good), Beauty of Waltham, Auguste Rigotard, Duc de Wellington, Sir Garnet Wolseley, Mons. Noman, Duchesse de Vallombrosa, and Mrs. Baker. It is almost impossible to particularise where all in their kind were perfect. The National Rose Society's medal was won by the winner of the above prize. Mr. Jowitt was placed second with a collection almost faultless. This gentleman's blooms of Marie Baumann, La France, Etienne Levet, Dupuy-Jamain, Horace Vernet (superb), Mons. E. Y. Teas, and Duchesse de Vallombrosa were unequalled in the Exhibition. Rev. C. H. Bulmer secured the third prize. In eighteen varieties (three trusses) Mr. Baker, Mr. Jowitt, and Mr. J. H. Arkwright secured the prizes in the order named. In twenty-four varieties the same names appear in the prize list in the same order of merit. The Veitch memorial prize of £5 and medal was won by Mr. W. Aldridge, gardener to Mr. Jowitt.

The class of Tea and Noisette Roses was very good, and keenly and numerously contested. Mr. Cant was placed first, Messrs. Paul & Son second, and Mr. Jowitt third. Mr. J. H. Arkwright's special prize (£5) for twelve Hybrid Perpetuals and twelve Teas and Noisettes was carried off by Mr. Jowitt with a superb artistically arranged collection, reflecting equal credit on the winner and originator of so novel and charming an idea.

In the two classes for new Roses sent out in 1878-79 Messrs. G. Paul & Son were first, Mr. Cant second, and Messrs. Curtis and Sandford third. Fair blooms were exhibited of H.P. Madame de Montchauveau, soft glowing pink; H.P. Boidien (a fine bloom of great substance, not as usual somewhat flat); H.P. A. K. Williams (most promising scarlet, shown well here and in collections); H.P. Charles Darwin, with grand foliage, thought much of by Mr. G. Paul, and said not to burn.

In the class restricted to Herefordshire Miss Bulmer took Col. Arbuthnot's special prize, £5, for twenty-four varieties, also the Society's first prize for twelve varieties (three trusses) and twelve varieties (singles) with remarkably fine and well coloured blooms, as usual with this lady admirably staged.

The Judges in the amateurs' division were Messrs. Cant and G. Paul; in the nurserymen's, Messrs. Baker and Arkwright; and in the decorative department Rev. W. B. S. Stanhope and H. Cooper Key.

It only remains to add that the decorations for which valuable prizes were given by Lord Bute and other friends of the Society were keenly and gracefully contested, that the band of brass which so disturbed "WYLD SAVAGE'S" equilibrium last year was by a novel arrangement advantageously removed to some distance in the open air, and that the only *contretemps* in the way of a crumpled Rose leaf your reporter this year has to bewail is the obligation of having to fill the place of one who so genially in our Journal "paints the Lily and adorns the Rose."—THE HEREFORDSHIRE INCUMBENT.

### THE SUNLESS SEASON.

THE same thing had struck me which I see "WYLD SAVAGE" brings out in his interesting article on the Roses of 1879, and that is how well Roses seem to progress without sunshine. I apprehend there is hardly such a sunless season upon record, yet the Strawberries continue to ripen, the Raspberries to colour, and the Roses to open excellently. Duke of Edinburgh a fortnight ago, and now La France, have been in great perfection. Cheshunt Hybrid would be if it could have two dry days together. I have noticed also Fisher Holmes as especially

glowing. I suppose never was Rose-opening spread over so wide a period. Last year my Roses were all over in a fortnight; this year they have been going on for six weeks, and still some, such as Paul Neyron and Madame de Serenye, have hardly begun.

I have been interested in observing the earliest Roses. Duke of Edinburgh and John Hopper were well to the front, also Annie Laxton, a very early Rose. Cheshunt Hybrid is early in sheltered places; I have had perfect hedges of bloom of this, also Camille de Rohan and Duke of Wellington. With regard to this latter I incline to think that Mr. George Paul ought to introduce it into his duplicate list, bracketed with Fisher Holmes. I find it very hard to tell them apart or together. It is to be feared, unless sunshine comes, the amount of unripened wood this autumn will be very considerable—a dreary prospect for next year, especially if the usual hard winter follows the unusually wet season. I am glad to see Mr. Mawley's notice vindicating his brother N.R.S. Secretary. All secretaries who have had to do with putting off Rose shows know the extreme inconvenience, and avoid this if possible; but Mr. D'Ombra in the first place consulted his Committee, and in the next, neither he nor they could possibly alter a long-before advertised Crystal Palace fixture.—A. C.

### SUTTON'S CONQUEROR TOMATO.

ALLOW me to bring to the notice of your readers the merits of the above Tomato. Quite accidentally about the middle of April I was offered a dozen plants of Conqueror; it was new to me, but being struck with the appearance and style of its growth, some larger plants being planted out and doing well, I accepted them. I planted them out the first day of May in a small span house on the north side, the house running east to west, and wonderfully well they have done. This is the best of all the varieties I grow for setting its fruit freely. I have counted a dozen good fruit in a bunch, plenty with six, seven, and eight in a cluster, of a good size. The largest I have weighed of this turned the scale at 10 ozs. The medium-sized ones are, however, the handsomest, and handsome they are. It is of a very pleasing colour, and when placed in the boxes promiscuously amongst three or four varieties is readily distinguished. This is an excellent Tomato for indoor work, far superior to the old Red, which variety, nevertheless, still holds a good position here.

On the south border of the house I planted Melons; these are now up to the top of the house, meeting the Tomatoes. These Melons unfortunately have been much infested with black aphides, and where these creatures come from is a mystery, the Melons and the house also being perfectly clear at starting. It is years since I saw this insect so bad as it is now; many are complaining of it, and we all know how very difficult it is to keep this enemy down, more especially in frames. More than one lot of Melon and Cucumber plants have been destroyed in this neighbourhood, the frames being cleared out and filled with fresh plants.—STEPHEN CASTLE, *Broadwater, Worthing.*

### ROSE TOPICS.

I CAN fully confirm what "E. M., Croydon," says with regard to the National Rose Show, and it is a pity "WYLD SAVAGE" is not a little more cautious in his remarks. It is impossible to be always altering and postponing the dates of Rose shows, especially that of the National Rose Show. No doubt it would have been wiser when the date was first considered to have fixed it later owing to the winter which we have had. Besides, when arrangements are made early in the season with a Company like that of the Crystal Palace an alteration in the fixture is not easily made. The next Saturday clashed with the Alexandra Palace Rose Show, and the Saturday after, the 12th, was the original fixture for Manchester. Luckily I can quite agree in "WYLD SAVAGE'S" remarks about Roses. They do not require much sun; in fact, such a hot burning week as we had last year at the end of June, though, as it happened, bringing many Roses to the Crystal Palace which would not otherwise have appeared, is most fatal as to the character and condition of all the dark-coloured Roses.

The cold and wet of this year has damaged many a bloom in the bud. Roses are exceptionally late, though in many places exceptionally fine, and those of Mr. Baker's which I helped to judge at South Kensington on the 8th of July were certainly among the finest I ever saw. His stand of Marquise de Castel-

lane was the finest of the variety I had ever seen, but he had also staged in the same box six very fine blooms of Marie Baumann, and the latter carried the day.

To return to the weather. Rain and wind damage hundreds of blooms. Mine is a sheltered garden; every Rose tree this winter was killed down to the snow line, except a few as Gloire de Dijon, Charles Lefebvre, &c., on the south walls, and also some of the younger growth of last year of the hardiest sorts, and of which Edouard Morren, Marquise de Castellane, Dupuy-Jamain, Charles Lefebvre, Fisher Holmes, and a few others of that type proved the hardiest. Every La France I had, and every one of the Victor Verdier type, were cut down to the snow line; but, as all my Roses are on the Manetti and are mulched with manure, all—with the exception of newly planted Roses, which I had from nurserymen too late in the season in order to fill up gaps—are growing, and promise to bloom more than usually well; in fact I should not hesitate to show even against the great champion Mr. Baker either twenty-four or thirty-six in ten days' time, but I wait and hope we are going to have a week at least of fine warm weather, and there is no fear of too much sun this year, so *pace* Camm. Though I can partly agree I cannot accept his sweeping assertions, and it is not pleasant to be cutting one's first Roses, even in north-east Yorkshire, on the 12th of July, and those only odd blooms, which is the case this year.

Mr. Cant was in very good form at Manchester, especially in his seventy-two, where there was hardly a bad bloom; Paul and Son very good in forty-eight trebles; and Cranston to the fore. But weather has told against Herefordshire. Those who depend on seedling Briars as stocks have little chance this backward season, though perhaps on strong soils and heavy clays their time may come later. Messrs. Baker and Jowitt were in strong force, the latter winning in the thirty-six, and being a very good second in the twenty-four; not much to choose. Canon Hole, unfortunately not there to greet us with his genial presence, sent a very fine dozen of Teas and Noisettes. Among newer Roses Alfred K. Williams is an undoubted acquisition. Messrs. Paul showed their grandly coloured seedling Duke of Teck. The weather was unpropitious, for rain fell in torrents—the usual luck of shows this year.—C. P. PEACH.

### NOTES AND GLEANINGS.

SEVERAL pretty and useful HERBACEOUS PLANTS are now flowering in Messrs. Osborn & Sons' nursery at Fulham, and indeed it is scarcely possible to visit this old nursery at any time without finding something of interest to the lover of plants. *Potentilla* William Rollison is extremely bright, with numerous rich scarlet flowers; *P. Menziesii* is also good, the colour of the flowers being somewhat darker. *Geum coccineum* plenum is another showy plant for the borders. Three *Dianthus* attract attention—viz., *D. dentatus*, medium flower, delicate pale pink, pretty; *D. deltoides*, rich dark pink, flowers numerous; *D. Napoleon III.*, a fine variety, flowers well formed, glowing crimson. Many *Campanulas* were in flower. One dwarf form was particularly noticeable; it was named *C. pumila*, but we believe it to be the *C. pusilla* of continental nurserymen. It grows 7 or 8 inches high, and bears pendulous blue flowers, like a diminutive Canterbury Bell. There is also a white variety. Both are very floriferous and exceedingly pretty in a border, and would no doubt succeed in pots.

ONE of the finest displays we have seen of the attractive flowering shrub *KALMIA LATIFOLIA* was in Miss Christy's garden at Coombe Bank. The shrubs were originally planted out in the borders, but were removed and planted in a large round bed on the lawn. That bed has for some time past been very beautiful, the varieties ranging from pure white to deep pink, some of the heads of flowers being nearly a foot in diameter. The soil is a light gravelly loam. This bed of *Kalmias* has for some time past been the finest feature in the garden, attracting even more attention than the Roses, which Mr. Moorman grows so well.

MR. H. HUSSEY VIVIAN says, in his "Notes of a Tour in America," that in the vegetation he was most interested by discovering "the RHODODENDRON growing wild in its native woods among the Alleghanies, forming a large portion of the undergrowth, especially in the bottoms. The coal measure soil there is its natural habitat. No wonder it flourishes so luxuriantly in Glamorganshire."

FOR early summer decoration of the conservatory few

plants are more useful and effective than *HYDRANGEAS* flowered in 5-inch pots. These plants are grown in immense numbers and of remarkable quality for the London market, and occasionally are found equally good in private gardens. Some of the best we have seen this year were in the conservatory of Ewell Castle, grown by Mr. Scutt the gardener. Several of the heads exceed 3 feet in circumference, and some of the individual flowers which we measured were upwards of 3½ inches in diameter. Dwarf *Hydrangeas* are so easily produced, that it is a little surprising they are not more frequently seen in fine condition in country greenhouses and conservatories. A brief outline of their propagation and culture is given in another column in reply to a correspondent.

ALL who have to provide striking and beautiful flowering plants for corridors, conservatories, &c., at this period of the year should not omit growing for that purpose the *HOSE-IN-HOSE* varieties of *CANTERBURY BELLS*. Blue and white pyramids of *Campanula Medium calycanthema* are extremely beautiful, and there is just time for producing plants that will flower well next year; but not a day should be lost in sowing the seed; indeed, for forming large and imposing specimens the plants should already be pricked off. The seed should be sown very thinly in pans of light rich soil, and if kept constantly moist, the seed pan being covered with a square of glass, the seed will germinate quickly. The seedlings after being established in small pots should be shifted into larger as quickly as possible, and be grown in the open air the same as *Strawberries* for forcing or *Chrysanthemums*. The plants now so attractive in the Ewell Castle conservatory were raised from seed sown last year on July 16th.

IN the gardens above referred to the mode adopted of preserving *STRAWBERRIES* FROM DECAY on account of the continuous rains is worthy of note, not because it is new, but because of its manifest usefulness. The crop of *Vicomtesse Héricart de Thury* is a prodigious one, and had the fruit been permitted to remain on the ground half of it would have been lost. In order to preserve it Mr. Scutt had three or four short stakes inserted round each plant, and to these the fruit trusses were loosely but securely fastened; the fruit is thus all exposed above the foliage, and the *Strawberry* beds present an attractive and remarkable appearance. The work of tying up the fruit is a little tedious, yet no labour is more profitable during a season like the present. Although much fruit is already spoiled by the wet, yet much more may be saved in many gardens if some such practice as that referred to is promptly adopted.

THE AMATEURS' CHAMPION CUP, given by Messrs. Pegler at the NORWICH ROSE SHOW, was won by Mr. R. N. G. Baker, and not by Mr. Jowitt, as was inadvertently stated in the report of that Show.

ON A SCULPTURED STONE at Llanidan in Anglesea is this inscription:—

Homo	{	locatus in damnatus ex humatus in renatus in	} Horto.
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Thus recording that "Man was placed in, was condemned from, was buried in, and re-born in a garden."

MR. CARTWRIGHT, the Honorary Secretary of the Leek Rose Society, informs us that the LEEK ROSE SHOW is again postponed from July 22nd to 29th, and that the NEWCASTLE-UNDER-LYME SHOW is postponed until August 2nd.

THE members of the PELARGONIUM SOCIETY WILL DINE TOGETHER at the Hotel, Swanley, on Wednesday next, and would be pleased to find that some of their horticultural friends would join them; those desirous of doing so should at once communicate with Mr. Cannell, at the Nurseries, Swanley, Kent. The Society purpose visiting Mr. Cannell's nursery and the fruit fields adjoining. It may be interesting to state that one farm in this neighbourhood sent fifteen tons of *Strawberries* in one day last week to the London markets. Dinner 4 P.M., 5s., exclusive of wine.

THERE is to be a great INTERNATIONAL EXHIBITION OF ROSES at Brie-Comte-Robert on the 6th, 7th, and 8th of September next, and all who intend to exhibit are requested to give notice of their intention fifteen days previously to the Vice-President, M. Camille Bernardin, Brie-Comte-Robert (Seine-et-Marne).

MR. BATEMAN of Westcombe Lodge, Wimbledon, has succeeded Mr. George Easton as gardener to Mr. R. Smith, Esq., Headlands, Wimbledon Common. Mr. GEORGE PAGE, fore-

man at Canford Manor, Wimborne, has been appointed head gardener at Chelston Manor, Torquay. Mr. THOMAS KNOWLES, Castle Coole, Ireland, has been appointed gardener to G. H. Morrell, Esq., Headington Hill Hall, Oxford. Mr. THOMAS SHEASBY becomes gardener to the Archbishop of Armagh, The Palace, Armagh; and Mr. A. YOUNG foreman at Bloxholm Hall, Sleaford, head gardener at Holme Lacy, Hereford, the beautiful seat of Sir Henry Scudamore Stanhope, Bart.

— IN many VINERIES which we have inspected this year we have observed a singular ABSENCE OF LEAVES AT THE LOWER PORTIONS OF THE LATERALS close to the main rods, and consequently the eyes or buds to which the laterals are usually pruned are not by any means so prominent as is desirable. For an inch or two at the base of the laterals there are, in a majority of instances, either no leaves to support the buds, or the leaves are only about an inch, or even less, in diameter, and can be of no real use in aiding the development of the buds for producing the next year's crop, when the Vines are pruned on the close-spur system. We mention the circumstance in order that attention may be directed to the subject, which is a somewhat important one. Without bold plump eyes strong breaks and fine bunches can hardly be expected, and in order to secure such buds it may be necessary to leave the spurs on certain Vines somewhat longer than is customary at the next pruning. The absence of the basal leaves in question is no doubt the result of the extraordinarily cold and especially dull weather that prevailed in early spring when the Vines were starting into growth; at any rate it has occurred in the case of Vines which are in the first condition of health generally, and under the most careful and competent cultivators.

— "BURNHAM BEECHES" will be the title of a little volume (from the pen of Mr. Francis George Heath), to be published in a few days by Messrs. Sampson, Low, Marston and Co. Amongst the illustrations will be included four wood engravings, copied by special permission from Mr. Vernon Heath's famous photographs of Burnham Beeches, representing Spring, Summer, Autumn, and Winter.

— AS an illustration of the unproductive nature of the present season, Sir E. W. Watkin, M.P., mentioned at the meeting of the South-Eastern Railway Company that last week alone the traffic for the conveyance of fruit over that line showed a falling-off to the extent of £500.

— REFERRING to the article on "Cowper as a Gardener" (page 42), a correspondent informs us that the poet removed to Weston Underwood in November, 1786, and not to Merton as was inadvertently stated in the article referred to.

— THE seventh annual Exhibition of the WOODFORD HORTICULTURAL SOCIETY which was held on the 16th inst. in the beautiful grounds of J. Spicer, Esq., The Harts, Woodford Green, was, we are informed, a very good one, and was visited by an immense number of spectators. The highest amount was received for admission since the formation of the Society, and much credit is due to the Secretary and Committee for the highly satisfactory manner in which they carried out the arrangements.

## ROYAL HORTICULTURAL SOCIETY.

JULY 22ND.

OWING to the Carnation and Picotee Society's Exhibition having been postponed, this meeting was one of only ordinary interest, although the Council-room was rendered bright by the collection of new plants, cut Roses, &c., from Messrs. Veitch, Williams, Bull, Barr & Sugden, Cannell, &c.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair. Mr. Carmichael, gardener to H. Porteus Oakes, Esq., Newton Court, Bury St. Edmunds, sent a handsome-looking Melon beautifully netted, and with an orange-coloured thick flesh. It was called Victory of Bristol. The skin is of a fine rich yellow colour and thin, but the flavour was not so good, in consequence, it was supposed, of the unfavourable season. The Committee expressed a wish to see it again this season if the weather should improve. Mr. J. Thrower, gardener to D. Gurney, Esq., North Runciton Hall, Lynn, sent a well-netted Melon with a green flesh and of good flavour, but not superior to other varieties in cultivation. It was thought to be over-ripe, and the Committee expressed a wish to see it again. Mr. Donaldson, The Gardens, Stoodleigh Court, Tiverton, sent two seedling Melons, neither of which was possessed of any merit. Mr. S. Woods, The Gardens, Osberton Hall, Worksop, sent fruit of Vanilla, to which a cultural commendation was awarded. Mr. J. Atkins, The Gardens, Lockinge Park, Wantage, sent a fine dish of well-ripened Albert Victor Nectarines, and was awarded a cultural

commendation. A fine dish of Hautbois Strawberries was exhibited from Chiswick.

FLORAL COMMITTEE.—Dr. Denny in the chair. The group of plants from Mr. B. S. Williams included several that were deserving of notice, such as *Bromelia Binotii*, a distinct and peculiar plant, with pendulous glossy leaves 3 to 4 feet long bordered with strong spines, the young leaves being a bright red colour, and the same colour tinges the older leaves for a great part of their length—first-class certificate. *Anthurium Walnewii* has large cordate leaves of a metallic green hue, rather elegant. The plant was referred to the Scientific Committee. *Encephalartos Williamsii*, leaves stiff, with narrow glaucous pinnae; *Adiantum mundulum*, a dwarf and elegant Maidenhair Fern. Mr. Bull's collection was characterised by a number of novelties of especial merit, the most important of which were the following:—*Coleus James Barnshaw*, neat habit, foliage streaked with crimson and yellow; *Sarracenia atrosanguinea*, narrow pitchers, 1 to 2 feet in height, the "lids" dark purplish red, distinct; *Tradescantia multicolor*, after the character of zebra, leaves streaked with green, white, and a lake tint. For all the above first-class certificates were awarded. Several other noteworthy plants were shown, as *Lilium Brownii*, bearing flowers of medium size, with white recurved petals; the interesting glossy-leaved *Acacia sphaerocephala*, with numbers of its hollow spines; the brilliant *Hæmanthus Kalbreyeri*; and the graceful *Cycas siamensis*.

Messrs. James Veitch & Sons sent eight boxes of cut Roses, including a number of excellent varieties, many of which were well represented—for instance, John Hopper, Dupuy-Jamain, Beauty of Waltham, Duke of Edinburgh, Marguerite de St. Amand, Marie Baumann, Général Jacqueminot, Louisa Wood, and Auguste Neumann. A silver Banksian medal was awarded for this fine collection. Mr. H. Cannell, Swanley, Kent, received a vote of thanks for a collection of cut blooms of *Fuchsias*, *Sweet Williams*, *Verbenas*, and *Tuberous Begonias*, the latter being very good in colour and form. Mr. Henry Hooper, Vine Nursery, Bath, received a similar award for a collection of *Carnations*, *Piotees*, and *Pinks*. A cultural commendation was awarded to Mr. J. C. Spyers, Orchid-grower to Sir T. Lawrence, Bart., M.P., Burford Lodge, Dorking, for *Odontoglossum coronarium*, planted in a long narrow box and bearing an extremely fine spike of flowers, the sepals and petals of which are bright pale brown marked with yellow at the base and with crisped margins, labellum pale yellow. *Pescatoria Klabochiana* was also shown, and a first-class certificate was awarded. This plant was bearing two or three *Bollea*-like flowers, only the colour is whitish, the tips of the sepals being tinged with a dark purplish tint.

Mr. R. Lloyd, gardener, Brookwood Asylum, Surrey, exhibited a number of new *Coleuses*, and one, Dr. Brushfield, received the honour of a first-class certificate. This variety is of strong growth, leaves large, very deeply and obtusely serrated, clouded and veined with crimson, with darker spots, and a pale yellow margin; the others were not sufficiently distinct to receive any special award. J. Elwes, Esq., of Cirencester, received a first-class certificate for a handsome Lily, a variety of *L. Kæmpferi*. The flowers were very large, 6 to 7 inches in diameter, the perianth divisions white, ground colour yellow at the base, spotted and clouded with purple near the margin. A box containing eight blooms of a seedling Rose was exhibited by Mr. R. Ward of Ipswich. It was named *Isabella Ward*, and said to be a seedling from *Baronne de Rothschild* crossed by *Sombreuil*; of strong habit, and flowers well in autumn. The flower was rather loose, but of a delicate bluish white colour. A second-class certificate was awarded. Messrs. Wm. Paul & Son, Waltham Cross, sent a box of new Roses, none of which, however, were very distinct. A vote of thanks was accorded to Messrs. Barr & Sugden, Covent Garden, for a number of *Iris* blooms of good size. Mr. C. Turner, Slough, received a second-class certificate for *Carnation The Queen*, a neat white flower with a few pink streaks. A number of *Pelargonium* blooms also came from the same firm.

## EXOCHORDA GRANDIFLORA.

THIS remarkably handsome shrub is one of the numerous valuable additions to our garden plants for which we are indebted to the assiduous collector Mr. Fortune. He first discovered it in the northern part of China in the year 1845, and some short time afterwards he found it in the Che-kiang Hills, and the specimens collected were despatched to Messrs. Standish & Noble of the Bagshot Nurseries under the name of *Amelanchier racemosa*. It flowered at Bagshot in 1854, and then attracted considerable attention owing to the profuseness with which the flowers were produced and the length of time that they continued in beauty. From examinations then made the name *Amelanchier racemosa* was found to be inaccurate, and the plant was referred to the genus *Spirea* under the name of *S. grandiflora*, but from certain characters of the fruit the present generic title was finally adopted.

The name being definitely determined general interest in the plant seemed to subside, and so we find that although more





Fig. 8.—*EXOCHORDA GRANDIFLORA*.

than twenty years have elapsed since its introduction it still remains comparatively unknown in gardens. This is the more unaccountable, as the merits of the shrub are of no ordinary character. When we have hardness of habit combined with beautiful flowers and a lengthened period of blooming it is a little surprising that such valuable qualities should remain generally unobserved or neglected; still this is only one of the many instances which are constantly occurring to us of useful and attractive plants being gradually lost in cultivation.

The *Exochorda* is diffuse in habit, and occasionally requires a little pruning to keep it in form; and it can scarcely be surpassed for planting in shrubberies, as it rarely exceeds 9 feet in height and flowers freely during April and May. The specimen figured was taken from a shrub at Stillmans, the new residence of Lady Dorothy Neville in Sussex.

### STRAWBERRY CULTURE IN POTS.

CONSIDERING how easy it is to grow Strawberry plants in pots, and the certainty there is of securing a fair crop of fruit from them with ordinary attention, it is a little surprising that Strawberries are not much more extensively grown in this way. As the season is unusually late there is yet time for preparing plants for fruiting in pots, though not, perhaps, for the earliest forcing, plants for which purpose being already fairly established.

The best of the runners produced by young plants should be selected for layering. Old plants, or runners of last year, should not be taken, as the younger plants do much better. The practice of layering the runners in the pots in which the plants are intended to fruit is no doubt a good one, but it is often more convenient to layer in 3-inch pots. The soil should be placed in the pots rather firmly to within half an inch of the rim, a mixture of loam and leaf soil or decayed manure in about equal parts being suitable; then plant a runner in each pot, securing them, if necessary, by a peg or stone.

During the time that the plants are producing roots the soil in the pots must be kept constantly moist by watering them once or twice a day according to the weather. When the plants are well rooted connecting runners should be severed, and shortly afterwards the young plants will be ready for the fruiting pots. They cannot be placed in these pots too soon, and as soon as they appear to have recovered from the effects of being separated from the parent plant.

This potting must be done with as much care as possible. Five and six-inch pots are the most suitable sizes to fruit the plants in. The smaller size may be employed for such varieties as Black Prince, which does not make much top growth, and the largest size may be used for President and Keens' Seedling. The pots should be clean and dry. Drainage to about the depth of an inch should be placed in each pot, covering this with a thin layer of fresh horse-droppings. The mixture in which the plants should be potted may consist of good loam and cow dung in a rather fresh state well mixed. No sand or light material should be used. When cow dung cannot be obtained horse or pig manure may be used. A little of this mixture should be put over the drainage at the bottom of the pots, and rammed firmly down before the plants are put in. All round the ball of the plant the soil must be rammed firmly, leaving only about three-quarters of an inch depth on the surface for watering.

After potting the plants may be placed where they have to make their growth in autumn. This position should be as much exposed to the sun as possible, and the pots should rest on a hard bottom, such as that afforded by coal ashes, boards, slates, &c. For a week or ten days, unless the weather is dry, little or no water will be needed; but afterwards water must be supplied freely, as nothing injures or checks the plants so much as allowing them to become too dry.

Should the few details given in the above remarks be attended to, a fine lot of Strawberry plants in pots will be the result by the end of October; and how to treat them for the next six months after that may be more seasonably told at that time.—A KITCHEN GARDENER.

### RED ROSE VINERIES.

EVERY reader of the Journal must have made himself acquainted with the popular owner of this place through perusing the many able articles which he has from time to time contributed to its pages, but not everyone has an oppor-

tunity of seeing how Grapes are grown at the Red Rose Vineria. I cannot hope to give so graphic an account of the place as Mr. Wright did last year, neither is it necessary for me to travel over the same ground; suffice it, then, to say that with small exceptions the place is substantially the same as it was then.

I visited Mr. Witherspoon on July 2nd, and was at once shown the Grapes. To say that they equal last year's crop, and that is saying much, does no sort of justice to them. They are greatly superior to last year both in quantity and in quality. Probably the bunches are not quite as large individually, but to my mind they are collectively very much larger than they were last year; notably the Lady Downe's, of which we were shown some splendid examples. Waltham Cross carries some fine bunches, beautiful in symmetry and large in berry. A young cane of Alnwick Seedling has eight bunches, which for size of berry equals, if it does not surpass, anything else in the house. The largest bunch is a Syrian, which probably weighed at the time of my visit half a stone. Of all the varieties that are grown here none seems to equal Gros Colman and Black Alicante. These were decidedly the best and most profitable Grapes last year, and to all appearances they will be the same this. The long rods of these two varieties, hanging covered with grandly shaped bunches and large noble berries, are very beautiful.

But to particularise is needless where all is up to—nay, sometimes beyond—the acknowledged standard of excellence. I may state, however, that in accordance with what I wrote last October the variety Mrs. Pince has again failed. This is the only exception in the house. The Vines on the back wall which carried such a crop last year are again well cropped, but not so heavily; but considering that the front Vines are this year several feet further up the rafters this is not surprising. One grand feature in this immense house is its cleanliness—not a trace of vermin of any description; everything as clean and healthy as can be desired, and the young growth already giving great promise of ripening off well.

In the unheated vinery, which by the way is used as an orchard house, a quantity of fruit trees in pots and tubs are growing. The majority of these trees, the reader will be aware, were severely injured by the frost last December, and although they are gradually recovering, the severity of the frost has left a memento. There is something rather curious about these trees which is perhaps worth naming. They all seem to have suffered most at from 3 to 5 feet from the ground level. In tall trees the middles are gone, while dwarf trees have their tops frost-bitten. While on this subject I may say that the Pears, of which Mr. Witherspoon had doubts, have fully borne out the Editors' assertion—that they would not bear fruit. After the fruit is apparently set it turns yellow about the footstalk, does not swell, and eventually drops off. The only Pears which have withstood the frost are the Hensle and Marie Louise d'Uccle; it is therefore quite fair to infer that these two varieties are possessed of a constitution considerably stronger than the majority of Pears. Although the Peach, Nectarine, and Plum trees suffered considerably, as remarked above, many of them are carrying a fair sprinkling of fine fruits. The only Peach on the back wall that has done at all well is Royal George, a valuable variety of a hardy constitution.

In the outside garden there is a grand prospect of small fruits, Gooseberries and Strawberries being particularly fine and promising. The crop of Apples, Pears, and Plums is light, owing to the injured fruit spurs referred to. On the whole the place is a great credit to its owner, and when the fact that he is, strictly speaking, an amateur is considered, it appears doubly so, and we sincerely regret that a misfortune such as destroyed his fruit crop this year should have happened to him; but as Mr. Witherspoon is not a person likely to be discouraged by failures we feel confident that he will try to devise means whereby he will be able in a great measure to secure a crop in spite of adverse circumstances and the strange vicissitudes of our changeable climate.—PETER FERGUSON.

THE REIGATE ROSE SHOW.—“D. Deal,” in his, to us here, very gratifying account of our Rose Show, from want of local information made two or three slight mistakes. It was the Redhill station he referred to, not the Reigate. The Show was held in the grounds of Mr. Waterlow; and the name of the young lady who deservedly gained so much praise for her exquisite and successful table decoration is Miss Flora Thorn-



ton, not Miss Thompson. I am sure "D., Deal," will forgive me for thus assuming the right to correct so great an authority as himself.—JOHN PAYNE, *Treasurer of the Reigate Rose Association.*

### ANTHURIUM SCHERTZERIANUM.

THIS is one of the most free and useful of stove plants, and does not require nearly so much heat and coddling as many others less pretentious. There are many forms of this plant—large and small flowered, light or high coloured, red or yellow in the spadix—due in great measure to the raising of plants from seed. It is not advisable, except for purposes of increase, to allow plants to form and mature seeds, as it retards their growth more than anything short of absolute neglect. Remove the flowers, therefore, as soon as they fade when seed is not required. If the object is to raise plants from seeds, eight or nine months will elapse before the seed is mature; it will then require to be washed clear of the pulp. Sow in pans half filled with drainage, filled to the rim with chopped sphagnum mixed with a fourth of peat and a sixth of sand, press it well down, give a good watering, and again press so as to form a smooth surface, on which scatter the seeds. Keep the soil constantly damp, and shade from powerful or direct sun. In a warm house not less than 60° at night the seedlings will appear in a few weeks, when they should have more light, and when large enough to handle prick them off in pans prepared as for sowing the seed; only half instead of a fourth of peat should be employed with the sphagnum and sand as before. Keep the young plants growing, and when large enough pot them off singly in 3-inch pots, giving preference to the strongest plants, as they invariably afford the largest and best spathes. Now is a good time to afford additional pot room to any plants requiring it. They succeed in a porous moisture-holding material, such as equal parts of lumpy peat and chopped sphagnum, with a sixth of crystal sand, and a little lumpy charcoal. Being a surface-rooter much soil is not necessary, but it is necessary that the drainage be thorough to allow of the water passing away freely.—G. A.

### AN AFTERNOON AT KEW.

WANDERING about the lovely gardens at Kew one might fancy oneself hundreds of miles away from London, particularly when you seek that part of the gardens that I did. Few of the holiday folk trouble the herbaceous department. The people want gaudy flowers and glass houses, not beds for the most part full of flowers which at first sight seem little better than weeds; so they keep near the Palm house and the gay beds that fringe the lake. Only a gardener or two and a student like myself are to be found here. A policeman puts his head in for a moment, but seeing only a poor parson and another man with a book in his hand he thinks he may leave us alone, so vanishes.

Half in shade are the beds, for the noble Elms temper the sun's rays and shade half the garden, so that it is under the most favourable circumstances I set to work to note some of the most prominent flowers. Here I must own I made a mistake in coming without a book on hardy flowers. Such a work as that of Mr. Sutherland would be of the greatest assistance as a book of reference in which to mark down flowers in bloom, for all the beds are arranged according to the natural order of the flowers. The Composites are together, the Amaryllids by themselves, so that it is only necessary to turn to the pages where the order is treated of to verify the flowers. Distinct well-written labels mark every flower, and a visitor may learn more in an afternoon at Kew than from weeks of study at home.

My principal object in visiting Kew was, however, the Iris, and here I must say I was disappointed. I expected to see far more in bloom than I found. I was a little late it is true, for a great number of the *barbata* family were over, still I expected to see many more than I did. I was delighted, however, to find several blooms of the original *Iris Kämpferi*. This is so shy a bloomer that I found none at Tooting, but at Kew the one plant had several fine flowers. I found one bulbous *Iris* in bloom which I had not seen at Tooting. It is *Xiphion lusitanicum*. It has bright yellow standards with deep orange falls. *Iris pinnata* was in bloom. It is a beautiful specimen of the bearded section; the standards are white margined with lavender.

I found also one or two early-blooming varieties of *Gladiolus*.

In the general herbaceous beds I found good blooms of *Baptisia australis*, *Galega orientalis*, *Epilobium angustifolium*, white, something like a single Rocket. The beautiful white Lily-like bloom *Anthericum Liliago* and several specimens of *Hemerocallis* were among the most striking blooms. I was a little disappointed with the display made by the *Delphiniums* and *Campanulas*, though there were several in bloom. I found fine examples of *Phlox pilosa* and *P. carolina* in bloom, also *Anchusa* and many varieties of *Digitalis* but in no way superior. The *Pentstemons* were just coming into flower, also the *Salvias*. The different species of *Armeria* were in full bloom.

After the Iris bed I was most interested and pleased with the *Aquilegias*. I found here that gem which I have often read of but never before seen—*A. chrysanthæa carulea*. This is a beautiful variety of *A. chrysanthæa*. The petals are light blue, while the spurs are primrose; the combination of colour is most delightful. There was another novelty—*A. californica hybrida*. This has yellow stamens and red orange spurs. *A. olympica*, another novelty, is rather like *A. glandulosa* with short spurs, but the petals are veined with primrose instead of blue. I found also a white Poppy (*Papaver alpinum*), and several rare species of *Clematis ovata*. Some grand herbaceous *Geraniums* made the rockery quite gay.

There were not many aquatics in bloom. The principal one was the well-known Water Hawthorn (*Aponogeton distachyon*); but I found one gem, a *Primula*, growing in a pot plunged in the water. It is called *Primula luteola*, and has primrose or pale yellow trusses of flower about the size and colour of the wild Oxlip.

There were, of course, very many more herbaceous plants in bloom at Kew at the time of my visit, but the list would be too long for your space. I have endeavoured to mention a few of the more leading sorts which I noted down, and which I hope may not be unacceptable to your readers. I know no more delightful place to spend a summer afternoon than these gardens; and when you combine business with pleasure, and try and stock your mind with knowledge at the same time as you fill your lungs with oxygen, you find the time slip away most pleasantly, and return home a fresher if not a more cultivated.—WYLD SAVAGE.

### ROSES, WALL FRUITS, &c., IN WALES.

IN a note in the *Journal of Horticulture* for May 1st, on the effects of the late severe season on Tea Roses, I mentioned that those which were uninjured would bloom better than usual, at least in this district; and that expectation has been verified, for the more hardy have been covered with a profusion of blooms which for once has been sufficiently late to escape spring frosts. Belle Lyonnaise and Maréchal Niel have surpassed all others; of the latter 470 blooms have been cut from the two largest trees, and many still remain. It has shown its Noisette character by clustering, but these were all disbudded, as our Roses are required by the family during the London season and are cut as single blooms. Many of the more tender Teas that suffered most are now making good growth, and Hybrid Perpetuals are looking all the better for being later, especially maidens.

The season is certainly very backward, but if we only have good weather to ripen fruits we shall have better crops here than for years past. Apricots show a heavy and healthy crop. Peaches have also a good crop, but the foliage and growth are poor, and as the stoning is in progress some loss may yet be expected. The growth generally is slow and the foliage small, yet I have not seen a single leaf affected with blister. Can it be that the continued cold has suited them, in that respect at least, better than sudden changes? In previous years with more healthy growth there has always been more or less of blistering. Of the newer varieties Dr. Hogg Peach and Lord Napier Nectarine seem to be the hardiest, having made splendid healthy growth in defiance of the prolonged cold. Cherries, both sweet and Morellos, have heavy crops. Pears unprotected are a failure or nearly so, but where a covering was employed they have set well and are swelling freely; while Quinces, which bloom much later, have a crop for the first time for years. Apples are very variable in the garden: one tree is heavily laden, the next has none, but there is a good average yield in the orchard. Plums, except Victoria, of which I grow most, are scarce, this result arising from deficient bloom and not from frost. All small fruits have, without exception, heavy crops. Figs are not satisfactory; some trees of Brown Turkey have half a crop, while six trees of Brunswick and White

Marseilles bear little but leaves this season: all are on a wall with a west aspect. Some were bundled and well thatched with straw, others were left last winter without any protection; these are rather better in each variety. Those that were protected broke into growth a little earlier. It is probable that the embryo Figs were also sooner on the move, thus incurring greater risk of injury from frost. Such useful additions to the dessert as Mulberries, Medlars, and Walnuts promise to be plentiful.—R. C., *St. Fugans, Glamorganshire.*

## WORK FOR THE WEEK.

### KITCHEN GARDEN.

ALTHOUGH the weather has been so long cold and wet Potatoes are growing strongly, and there is little or no trace of disease; but there is a great need of bright weather to check the growth and induce the production of tubers. The lateness of the Potato and Pea crops will retard the planting-out of Broccoli, &c., and as the season is fast passing away it is necessary to proceed in planting Cauliflowers for autumn use, also Broccoli, Savoy, and other description of greens for winter and spring use, planting either between the rows of Potatoes or in any vacant ground that may be available, from which they may be removed as the ground becomes cleared of Peas and Potatoes. The latter if they are attacked by disease should be lifted without delay, as to leave them in the ground is to endanger the whole crop, whilst lifting will arrest the progress of the disease. Carefully pick out the diseased tubers and store away those that are sound. The tubers of medium size should be selected for sets, placing them thinly in a dry airy shed. Ground should be reserved, and where practicable prepared for the main crop of autumn-sown Onions and that very important crop Winter Spinach. A sowing of early Cabbage should be made without delay, and a good sowing should also be made of such hardy kinds of Lettuce as Bath or Brown Cos (black-seeded), Bath or Brown Sugarloaf Cos, and Stanstead Park, which will afford a late supply. The earliest Celery should be earthed-up, taking care that there is no lack of water at the roots, and that the leaves are kept close together. Later crops should only have a moderate earthing to keep the plants steady, and if the plants be dusted with soot whilst damp it will help to ward off attacks of the fly. The planting-out of late crops must be proceeded with and brought to a close as soon as possible. Rosette Coleworts will be ready to prick or plant out from the seed beds. Chervil and Corn Salad sown now will stand for the best part of the winter, preferably in a sheltered border. When ready take up Garlic and Shallots, spreading them on the surface of the ground for a few days, so that they may be well dried. Similar remarks apply to the earlier kinds of autumn-sown Onions, the general crop of which will not be ready to pull for some time yet. Tomatoes, when they have covered the allotted space, should be well thinned of the large leaves and stopped a joint beyond the trusses.

### HARDY FRUIT GARDEN.

The various kinds of fruit trees trained to walls should be frequently looked over, nailing or tying in leading shoots, and removing or stopping any not required. The undue production of wood must be restrained by timely stopping or removing strong forerights altogether. Apples have in some instances set a good crop, such as Keswick Codlin, Lord Suffield, Cox's Pomona, Warner's King, Cellini, Holland Pippin, Yorkshire Greening, Hunthouse, Cockpit, Dumelow's Seedling, and Northern Greening in culinary kinds; Irish Peach, Devonshire Quarrenden, Kerry Pippin, King of the Pippins, Cox's Orange Pippin, Court of Wick, Syke House Russet, Golden Russet, Reinette du Canada, Adams' Pearmain, Cockle Pippin, Duke of Devonshire, Dutch Mignonne, and Sturmer Pippin in dessert kinds. The season is, however, so far advanced and the weather so unfavourable, that unless we are favoured with very fine weather the crop will be of little value. The growth should be kept well thinned, so as to admit light and air to the spurs, keeping the shoots stopped to about three leaves. The different kinds of bush fruit will need to be carefully netted to preserve them from birds; also late Cherries. Continue to pot runners of Strawberries for making new plantations about the middle of next month, or as soon as the plants have filled the pots with roots. Forced plants that were planted out in May and early June should have the runners removed and be well mulched, and they will afford an acceptable autumn crop if the weather should prove favourable.

### FRUIT HOUSES.

*Melons.*—If fruit of these be required very late a last sowing should now be made, but unless there be a light and well-heated structure available the prospect of a crop will be indifferent. The batch of plants for fruiting in October should be planted at once, it being equally necessary that they have a light well-heated structure. If the weather be bright and the temperature at night does not fall below 65° fire heat may be dispensed with, only it is necessary that the bottom heat, if derived from fermenting materials be 90°, and 80° to 85° if from hot-water pipes; the

temperature of the house by day 70° to 75°, advancing with sun heat to 85° or 90°. In pits or frames the last batch will now be setting their fruit, and a good watering should be given before the flowers open. If watering is necessary during the time the fruits are setting it should be done carefully, as a dry atmosphere with rather free ventilation is essential to a good set. Syringe freely, and afford copious supplies of water at the roots of all growing crops, always except during the setting and ripening periods. As soon as the fruit of the different crops are set and swelling earth up the plants firmly. Keep the growths well in hand after the fruit commences to swell so as to admit light and air to the principal leaves, also stop all lateral growths to one joint. If canker appears at the collar promptly arrest its progress by rubbing the part with quicklime; and if there be any evidence of the fruit cracking cut the vine half through a few joints below the fruit, reducing the supply of water at the root and maintaining a dry well-ventilated atmosphere.

*Pines.*—Take advantage of the clearing-out of the plants which were started into fruit early in the year to give the successional plants more room. The fermenting materials will, if they were renewed in spring, only require the turning of the bed to a depth of 18 inches, but beds that were not renewed in spring should have a foot of new tan mixed with the old to a depth of 18 inches. The suckers from the fruited plants above alluded to will be in a fit state for potting, but before doing so a pit having a fermenting bed with a bottom heat of 90° must be in readiness to receive them. In potting ram the fibrous loam firmly in the pots and round the base of the sucker. Water and place the plants in the bed, bringing the plunging material over the surface of the pots so as to secure them against becoming dry at the top, and to prevent having recourse to watering again until roots are formed. The plants must be effectually shaded from powerful sun, and the pits ventilated at 85°. Lightly syringe the plants overhead occasionally.

### PLANT HOUSES.

*Stove.*—*Eucharis amazonica* is indispensable where the demand for cut flowers is considerable, and with a sufficient number of plants it can be had in bloom through the year by growing and resting a portion of the plants at different seasons. Plants that bloomed early and have since made and completed the growth should be rested. Place the plants in a temperature about 10° lower than that in which they have been grown for five or six weeks, allowing no more water than to prevent the foliage suffering, after which return them to heat and they will quickly throw up their flowers. If cuttings be now taken of *Poinsettias*, short stubby shoots of about 4-inch lengths with heels and inserted in sandy soil, they will root quickly in gentle heat kept rather close, making nice sturdy plants grown on in plenty of light and not too much heat. The Tuberous-rooted section of *Begonias*, though best treated as temperate and hardy subjects, are suitable for a display in this structure early and also late in the season. Seedlings from seed sown in spring and grown on in gentle heat, if shifted into larger pots as they require it, giving the last shift as the plants show bloom, and grown on shelves near the glass, will make a grand display late in the season.

*Greenhouse.*—For room decoration nothing is so well adapted as Palms, *Dracenas*, and other foliage plants, and it is surprising what a time they will keep in good condition if properly watered. Of Palms *Corypha australis*, *Latania borbonica*, *L. aurea*, *Phoenix recinata*, *P. tenuis*, *Pritchardia filamentosa*, *Seaforthia elegans*, *Kentia Fosteriana*, *Areca Baueri*, *A. rubra*, *Sabal Adansoni*, and *Thrinax parviflora* may be enumerated as suitable when in a small state, in which they may be kept by restricting the root room, there being no necessity to afford large pots unless the object be to grow the plants on as quickly as possible. To the Palms may be added *Aralia leptophylla*, *A. quinquefolia*, *A. reticulata*, *Dracena australis*, *D. rubra*, and *D. congesta*, *Beaucarnea recurvata*, *Yucca filamentosa variegata*, *Y. quadricolor*, *Y. aloifolia variegata*, *Y. filifera*, and *Y. Stokesi*; *Aspidistra lurida variegata*, *Casuarina sumatrana*, *Lomatia elegantissima*, *L. salicifolia*, and *L. ferruginea*, *Ficus elastica*, *Eurya latifolia variegata*, *Grevillea Hilli*, *G. elegans* and *G. robusta*. The last with *Lomatias* having foliage of the most elegant description will not bear being kept continuously in the dwelling house like the harder Palms. Plants intended for room decoration should be grown in light airy positions with no more heat than to keep them in steady growth, insuring their full development. Encourage *Chrysanthemums* by the use of liquid manure every other time they require water, so soon as the roots get fairly hold of the soil after being placed in their flowering pots. It is a practice with some to plunge the pots, thinking that it saves watering and maintains more uniform moisture at the roots, which is no doubt correct; at the same time, with proper attention in watering there is less danger of the plants rooting through when placed on a hard bottom, and the wood is shorter jointed. On no account must the plants be allowed to lack water, for if they do the lower leaves will suffer.

*Early-flowered Pelargoniums* should be placed outdoors in the full sun to thoroughly ripen the wood previously to cutting them down. Propagation may be proceeded with, as the cuttings strike freely whilst the foliage is fresh and green. Insert them in sandy soil, and place the pots in a half-shaded hotbed, and they speedily

produce roots. *Lilium auratum* coming on for later flowering will now require copious supplies of water, and should have top-dressings of old cow dung or well-decayed manure, and the plants supported with sticks. *L. speciosum* var. should have attention in tying the stems well out where a number of bulbs are grown in a pot. Keep a vigilant watch for aphides, mulching the surface with rich material, and keeping the plants well supplied with water and occasionally with liquid manure. Plants of *Lilium* that have flowered should be placed outdoors and duly attended to with water, as the longer the foliage is kept healthy the greater is the strength accumulated in the bulbs, and the stronger will next season's growth and blooms be. *Cinerarias* and *Primulas* for autumn flowering should receive their final potting before they become rootbound, placing the pots on a hard bottom of ashes in a cold frame. Water copiously, and occasionally with liquid manure, as the stronger the plants the finer will be the bloom. Keep them cool by free ventilation, and afford shade in the middle of the day. Sow herbaceous *Calceolarias* in pots or pans, and place them under a handlight in a shady situation to lessen the necessity for watering. *Chrysanthemums* must be staked and tied up as they advance in growth, for if neglected in that respect they are liable to be broken by the wind; and when the pots are filled with roots afford liquid manure at every alternate watering, or not more distantly than once a week. Zonal *Pelargoniums* intended for autumn and winter flowering should be at once potted and plunged in ashes outside. Stop the shoots if necessary to induce compact growth, and supply liquid manure occasionally to enable them to make good growth. Young vigorous plants of *Fuchsias* are the better for being plunged in ashes outdoors, as full exposure to light and air consolidates the growths and causes them to produce good foliage and blossoms.

#### FLOWER GARDEN.

Flower beds are not in nearly so satisfactory a condition as is usual at this time of year, but such moisture-loving plants as *Calceolarias*, *Violas*, *Lobelias*, &c., are thriving and have caused little trouble in watering so far. Seed pods and decayed flowers should be removed; indeed all bedding plants should have the seed vessels removed as soon as the petals fall, as the production of seed tends greatly to the exhaustion of the plant. *Verbenas* should be kept well pegged down until the ground is covered. To have fine beds of these they must be frequently picked over and kept well thinned by nipping a portion of the shoots back, so as to admit light and air and thus induce fresh young growth. Such free-growing plants as *Mesembryanthemum cordifolium* variegatum, *Stellaria graminea aurea*, and others employed for carpet bedding, soon encroach on less vigorous plants if not frequently pinched-in. The effect of carpet bedding is greatly marred if the lines, &c., forming the patterns are not kept clear and distinct.

#### TRADE CATALOGUE RECEIVED.

Louis Van Houtte, Ghent, Belgium.—*Catalogue of Miscellaneous Bulbous Plants.*

#### TO CORRESPONDENTS.

\*.\* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense. Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

**SEEDLING PELARGONIUM (O. W. A.).**—The flower of the Show *Pelargonium* had shed the whole of its petals, and we are consequently unable to form an opinion of its merits. Had you applied a drop of gum to the base of the petals the flowers would have arrived in good condition. We may, however, observe that there is nothing very remarkable in the colour of the petals; and unless the flower is of exceptionally good form and the plant of good habit, the variety will not be equal to those already in commerce.

**SHOW PELARGONIUMS (Amateur, Oron).**—As the flowers are fading remove all the trusses, syringe the plants thoroughly to cleanse them from insects, and place them in a sunny position out of doors, only watering them occasionally to prevent the leaves shrivelling and falling prematurely. They will then ripen their wood. As soon as the shoots are brown and hard cut down the plants to within an inch or less of the part to which they were pruned last year. If the rains are not excessive the plants may remain out of doors to break; they are better, however, if they are in frames, so that the lights can be placed over them during drenching rains. When they have grown about half an inch shake them out of the pots, slightly shortening any straggling roots, and pot the plants firmly in smaller, well-drained, clean pots, watering sparingly for a time, and keeping the plants rather close until they recover from the check they have received; then give air plentifully and water more freely, yet with care, and they will shortly become sturdy healthy plants in fine condition for passing the winter and for flowering next year.

**HYDRANGEAS (A Young Gardener).**—If stout short-jointed cuttings are inserted now and kept in a close place until rooted they will form dwarf plants that will produce fine heads of flowers next year. The cuttings

should be inserted singly in 3-inch pots, and when these are filled with roots the best of the plants may be shifted in 5-inch pots, the others remaining in their cutting pots until spring, when they can be shifted as soon as the flower heads are visible. The plants during the summer should be placed in a sunny position out of doors, simply watering them as required: the growth will then become matured, and flower heads will form. Dwarf *Hydrangeas* are very useful for decorative purposes in early summer. When the flower heads form in the spring the plants require copious supplies of liquid manure; they then produce healthy foliage and large flowers.

**PLANTING NYMPHÆA ODORATA (Eim).**—The tank is much too shallow, it being necessary that there be 4 to 6 inches of strong loam placed at the bottom for the *Lily* to be planted in, which it may by turning it out of the pot and making the soil firm around the ball. The tank should be filled with soft or pond water, allowing a depth of water of 12 to 15 inches over the soil. Though being of moderate growth it will do in a less depth of water provided there be room laterally to admit of the leaves floating. Running water is not necessary, it being sufficient if the water be replenished as necessary with rain or pond water poured through a rose watering pot so as resemble rain. The conservatory would be more suitable than a warm greenhouse.

**CUCUMBERS INFESTED WITH APHIDES (T. H.).**—When aphides obtain a hold it is difficult to effect a riddance except by repeated fumigations, doing so two or three nights consecutively, and moderately so as not to injure the foliage, taking care to have the leaves dry, and to deliver the smoke as cool as possible. Syringing with tobacco juice, half a pint to a gallon of water, would also prove effectual, repeating if necessary. There is no preventive of insect attacks other than syringing and maintaining a sweet atmosphere, the attack being probably due to the prolonged sunless weather.

**BEDDED GEMANIUMS NOT FLOWERING (J. R. W.).**—The gaslight shining on them is not the cause. The plants probably were not well ripened in growth, or the position is shaded.

**POTATOES DECAYING (A. L.).**—Excessive wet is the cause; and if the temperature increases to any great extent, and at the same time wet and dull weather prevails, the murrain will almost certainly make its appearance. We attribute its general absence hitherto to the low temperature of the month. We have seen some instances of the disease this year, but it is not nearly so virulent as we have known it in former years when the wet was accompanied by greater heat than has been recently registered.

**BLIGHT ON APPLE TREES (Amateur).**—If you refer to the American blight, which covers the branches in unsightly wool-like patches, dress the parts with paraffin with a painter's brush, not applying the oil to the foliage or to the smooth bark where there are no insects. Mildew may be destroyed by dusting the foliage with flowers of sulphur, just syringing the tree if needed so that the sulphur adheres to the leaves.

**NEAPOLITAN VIOLETS (Idem).**—The plants grow freely if planted in good soil and kept free from weeds and runners; but a south-west border is not the best position for them. A border facing east or north would be more suitable, being cooler. During their flowering period the plants are quite worthy of the protection of glass, as when thus protected the flowers are finer, cleaner, and sweeter than when they are exposed.

**AERIAL ROOTS ON VINES (C. A. J.).**—Allow the roots to remain until they shrivel naturally with the decay of the foliage. Their production has no doubt been accelerated by the coldness of the border—the sun, what little there has been, not being able to penetrate the manure which you placed on the border. We should remove a portion of it, pointing the remainder carefully in, not, however, touching the roots. You may again cover the border with manure in October, removing a portion of it about May, or sooner if the weather is mild. The Grapes should be thinned before they touch each other; indeed, they cannot be thinned too soon when it is seen the berries are fairly formed, and are swelling regularly and freely.

**STRIKING ROSE CUTTINGS (Lady S. and Others).**—The present is an excellent time for inserting the cuttings, which should be made from wood that is becoming firm, such as the lower portions of the shoots that have produced blossoms. The cuttings should be 6 or 7 inches in length, the leaves being cut from the lower portion, inserting the cuttings quite 4 inches deep in a rather shaded border. If the weather proves dry they should be sprinkled frequently, so as to maintain the foliage fresh as long as possible. They strike more readily in rather light than in heavy soil, but it is necessary that it be made firm around the cuttings. Nearly all kinds of Hybrid *Pernetals* strike freely at this season, and *Tees* may be readily propagated now with the aid of a frame or handlights.

**THE GREAT MULLEIN (R. S. Londonderry, and A. McK.).**—This plant, *Verbascum Thapsus*, grows wild on dry ditch banks and on gravelly soil in various parts of the country. It is no doubt to be found in Ireland; at any rate, it has an Irish name, *Cuineál Muiré*. Apply to a local botanist; or perhaps the Curator of the Dublin Botanic Gardens could supply you with the information you require.

**PROPAGATING THE ELDER (T. G. S.).**—Few trees or shrubs strike more readily than this. If you obtain some branches 2 to 3 feet in length early in the autumn, when the leaves are decaying, and plant them rather deeply and firmly where you desire the shelter, nearly all of them will emit roots freely, and will quickly form such a screen as you desire.

**VEGETABLES FOR EXHIBITION (J. T. F.).**—It is impossible for anyone to answer your question in the form which you desire. In making a selection of kinds the period of the year at which you wish to exhibit must be taken into account. For instance, if you desire to exhibit in July it is obvious that some of the vegetables you have named cannot be staged in good condition. The best advice we can give you is to read the reports of shows that have appeared from time to time in the *Journal*, and note the varieties with which such exhibitors as Messrs. Miles, Pragnel, Iggulden, and other good growers have secured their prizes at the different periods of the year.

**SOWING CINEBARIA SEED (A Youngster).**—It is not only not too late for sowing the seed, but it is probable that the plants raised from seed sown now will prove better than those raised two months previously. Mr. James of Isleworth, who grows and exhibits *Cinebarias* so well, seldom sows the seed before July. Sow at once thinly in very light rich soil, placing the seed pan in a cool moist frame, and keep the soil constantly moist. The seedlings will soon appear, and with good culture you will have fine flowering plants next spring.

**EVERLASTING PEA (H. S.).**—It is impossible for us to know whether there is a species or variety of *Lathyrus* in commerce other than the one you describe as having light "bright sky blue flowers." There are species

having blue flowers, and the one you refer to may or may not be one of them. Cannot you ascertain the origin of the plant, and thus determine for yourself whether it is a new or old variety? Without seeing a flower we cannot give a definite opinion on the merits of the plant.

**GRAPES DECAYING (Lodge).—**The fact that the Vines have produced 80 lbs. of Grapes on each rod 16 feet in length is conclusive evidence that they have been overcropped. The roots, too, have probably penetrated into ungenial soil that has caused decay of the stems. You had better examine the roots, lifting them if necessary; or, if this is not requisite remove the surface soil from the border, just baring the roots, and cover them with a compost of turfy loam, wood ashes, and crushed bones, so as to incite the production of surface roots. Remove more than half of the bunches, and the remainder may perhaps finish tolerably well. In the state in which the Vines appear to be one-third of your present crop will be ample. As the weather is so wet and cold fire heat with judicious ventilation is very advisable both for aiding the ripening of the Grapes and promoting the maturation of the wood.

**HARVEST BUNCH OF GRAPES (Amateur).—**The heaviest bunch of Grapes we have seen, and so far as we know that has been officially recorded, was a bunch of the Calabrian Raisin weighing 26 lbs. 4 ozs. grown by Mr. Curror, gardener to J. Douglas, Esq., Eskbank, Dalkeith, and exhibited in Edinburgh on Sept. 15th, 1875. A bunch of Syrian grown by Mr. Dickson, gardener to J. Jardine, Esq., Arkleton, Langholm, weighed at the same show 25 lbs. 15 ozs. This appeared to be the larger bunch of the two, the berries having been more thinned than the former. Mr. Dickson has stated that the bunch when cut weighed 26 lbs. 8 ozs., so that either it must have lost weight before it reached the show or there was a difference in the scales employed in the two instances. This bunch is figured and Mr. Dickson's mode of culture described on page 287, No. 787, vol. xxix. of the Journal. Mr. Roberts, The Gardens, Charleville Forest, Tuillamore, has grown a bunch of Gros Guillaume weighing 23 lbs. 5 ozs. Your second question, as put, cannot be answered.

**VINE LEAVES YELLOW (Mason).—**As only the older leaves have turned yellow, the foliage of the sub-laterals being green and fresh, the cause is probably owing to the coldness of the border, the Vines not having made sufficient roots to support growth when the earlier leaves were expanding. The roots are more active now, hence the better condition of the more recently formed leaves. Permit as much of the healthy foliage to remain as possible, but especially guard against overcrowding.

**VINE LEAVES DISCOLOURED (W. M.).—**This discolouration is not uncommon in Barbarossa (Gros Guillaume), although it is not usual for it to be so marked thus early in the season. With a due amount of fire heat and judicious ventilation the wood and crop will probably ripen well and the Vine be in good condition for next year.

**CUTTING IVY (Persim Brigg).—**As the summer is wet and dull the Ivy if cut now will make fresh growth this year. You might, however, without much trouble leave a few of the long "ropes and tresses" uncut and secure them to the wall after the bulk of the growth has been cut away; you would then have a green surface at once. This is what we should do, for very possibly if you shave the wall closely you will find some bare spaces in consequence of the growth not having adhered to the wall. This is frequently the case when Ivy has been long neglected.

**PEARS CRACKING (Gardner).—**Some varieties of Pears are more subject to cracking than others. It is the result of a check received by the fruit when in a young state, whereby the cuticle loses its elasticity. This check may be caused by drought at the roots, or by a current of cold dry air striking the trees soon after the fruit had formed. There is no cure, and all the fruit like the specimen sent should at once be removed from the tree.

**NITRATE OF SODA (W. E. Kay).—**It can be had from dealers in agricultural manures, and has been advertised in our columns by Mr. Smyth, 10, Castle Street, Bndell Street, Long Acre, London. From one-half to three-quarters of an ounce per square yard is a suitable application for kitchen garden crops.

**CUCUMBERS DISEASED (E. B. S., Bridgend).—**The plants are infested with what is known as the Cucumber disease, which is clearly illustrated and accurately described by Mr. Worthington G. Smith on page 34, No. 720, vol. xxviii. of the Journal. The parasites which cause the protuberances on the roots probably exist in the soil. We know of no cure, and you had better remove all the soil from the house, clean the pit thoroughly, and plant young plants in soil obtained from another source. Before destroying the plants, however, you might try the experiment of watering them with paraffin at the strength of about an ounce to a gallon of water, mixing thoroughly (which is not easy) with the aid of a syringe, and let us know the result.

**CATERPILLARS ON GOOSEBERRY BUSHES (W. D. M.).—**The caterpillar you have sent is the larva of the Gooseberry Sawfly, *Tenthredo groenlandica*, and the female deposits her eggs close to the sides of the principal nervures on the under side of the leaves, which is very remarkable, for all the females of this extensive family are furnished with an instrument called the saw, for the purpose of cutting into the leaves and stalks and introducing the eggs between the cuticles or under the bark. In about a week the larvæ hatch, and commence feeding on the leaf on which they are stationed, and soon riddle them full of small holes; thus they go on feeding and changing their successive skins as they increase in size, until they are three-fourths of an inch long, when they are seen scattered round the edges of a partly demolished leaf, holding by their fore legs, with their tails turned up, or lying on one side. Hand-picking is the most effective mode of riddance.

**FUNGUS (R. L.).—**It is the early stage of *Phallus impudicus*, or Stinkhorn.

**INSECTS ON VINES (M. D.).—**There are no thrips on the leaf sent, but there is evidence of green fly being either on the Vines or on some other plants near them. Fumigate the house moderately on two consecutive evenings, and then give the Vines a thorough washing, directing the syringe between the bunches and driving the water forcibly to the glass, so that it falls in quantity on the upper surface of the leaves and cleanses them from all impurities. The water which trickles down the bunches will do little or no harm provided the syringing is properly done.

**NAMES OF PLANTS (M. H. M.).—**It is impossible to name the plant from such a totally withered spray. If you will send us a fresh flowering specimen we will endeavour to supply you with the name. (A. R.).—Your Rose is a somewhat rare one and very fragrant. Mr. William Paul, to whom we submitted the blooms, thinks it a variety of the Musk Rose named *Princesse de Nassau*. We have no doubt that is the name of the Rose which we remember having seen many years ago in a garden in Berkshire. (W. Adams).—The scrap you have sent is quite unrecognisable. Send a better

flowering specimen when the plant attains a larger size. (E. Osney).—*Hesmanthus coccineus*, a very fine flower head. (J. G.).—*Chrysanthemum montanum*. (J. H.).—1, *Campanula glomerata*; 2, *Centauria montana*; 3, *Tradescantia virginica*; 4, a garden variety of *Potentilla atrovirens*; 5, *Geranium striatum*; 6, *G. sanguineum*; 7, *Centranthus ruber*; 8, The specimen was insufficient for identification. (Pen and Ink).—1, It appears to be *Campanula grandis* (the large Bellflower), but it is not easy to determine from such a small portion of the plant; 2, *Lychinis chalcedonica* (Scarlet Lychinis). (G. O. S.).—It is a dark-coloured variety of *Lilium Martagon*. The species is a native of Germany, and was introduced to this country in 1598. You are probably right in considering that the plant was first introduced into your district by the monks of Furness Abbey. (Hall).—5, *Salicella Willdenovi*; 6, *Cystopteris montana*; 8, *Pteris arguta*. We do not undertake to name varieties of *Coleracea* from leaves. The *Begonia* has no flowers: the leaf resembles that of *B. Evansiana*. The *Achimenes* is *Ambrosia Verschaffeltii*. (A. O.).—See reply to "A. B." for the name of the white Rose; the other resembles the small Rose de Meaux. (William Mills).—1, is *Pelisa* sp.; 2, specimen too withered; 3, appears to be *Polypodium pectinatum*. (B. O.).—1, *Orchis affinis*; 2 and 3, specimens too small for identification; 4, *Reseda luteola*; 5, *Polentilla argentea*; 6, resembles *Gymnogramma leptophylla*. (Murtel).—The leaf is from the Marsh Pennywort, *Hydrocotyle vulgaris*; the Orchid specimen was not sufficient for identification.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### CULTIVATION OF ITALIAN RYE GRASS.

THIS grass, so valuable for various purposes, it appears was first introduced, or brought into special notice at any rate, by Mr. Lawson of Edinburgh, who had paid great attention to its cultivation previous to his report published in the "Quarterly Journal of Agriculture" for January, 1832. In that year a gentleman whose farm adjoined our own purchased some seed at a guinea per bushel and by that means the grass was introduced into our neighbourhood and its early growth and productive qualities were so striking as compared with the ordinary sorts of rye grass that it attracted at that time much notice amongst the farmers of the district. This plant, *Lolium italicum* (Italian rye grass), is distinguished from the common rye grass (*Lolium perenne*) by larger and broader leaves, and also by its colour being a deeper green, and by the greater height to which it grows. It is often sown in the autumn, when not sown with other grasses in admixture, and in the mildest climates of the kingdom it certainly flourishes satisfactorily, and is also especially cultivated in different countries in Europe. It is also sown in the spring of the year either with or without a crop of corn. Having grown it for many years we always select the best sample and the cleanest we can obtain as foreign seed. We have found this to be necessary, seeing that by sowing the seed in this country the grass loses after a little time its early habit of growth, and likewise its strength of blade and quick successional produce. It is often sown with clover, lucerne, &c., but its growth is so rapid that it completely overruns and quickly kills them.

Although this grass grows so early and so fast it is very hardy more so than the common sorts of rye grass, for in various districts abroad where the winters are severe the common varieties often perish, but not so with the Italian rye grass, for it stands the winter well even when sown in August and September. It is a perennial grass, too, and has been proved so by our own growth, but unless it is constantly dressed with the strongest and richest manures it will die away and the ground become naked at bottom. When, however, it is constantly manured with dressings rich in ammonia, such as the best Peruvian guano, nitrate of soda, or with rich liquid manure, the plant by continually tillering fills up vacancies so as to cover the ground with a thick meadow-like growth, which may be retained for a number of years. Our most noted growers that for many years past have depended upon liquid manures, chiefly for forcing on an early produce and quick succession, have been Mr. Huxtable in Dorsetshire, Mr. Dickson in Hampshire, and Mr. Mechi in Essex, with some others. Whether it answers the purpose to use liquid manure, especially to a great extent, and carried to a considerable distance by force pump, pipes, and hose, is very doubtful, as compared with liberal applications of guano, nitrate of soda, &c. Italian rye grass answers a good purpose in the want of the land whereon it grows, being situated below the level of farmyards, as the crops can then be irrigated with the drainage from the farm buildings. If all the rain water be collected and concentrated to assist the flow of the drainage by

its own gravity it will be attended not only with economy but with success, and in case a strong land spring of water is at hand and can be added, so much the better, because the drainage can then be more quickly and evenly distributed over a given area.

This grass has been found in numerous instances a most valuable adjunct in carrying out the system of house-feeding cattle, whether it is used for fattening purposes or for dairy cows. We consider there is no other grass food, unassisted by artificial food, which will enable cows to give so large a quantity of rich milk. Upon suitable soils a small area devoted to it, if abundantly manured, will yield more green fodder during the summer months than can probably be obtained on a given space by any other fodder crop. Nitrogen may be considered as its favourite food, and if this be copiously supplied either by artificial or by liquid manure, it is known to be capable of growing an inch or more per day. In fact, upon our own farm we once measured an individual plant which after being cut down by the scythes had grown 34 inches in the succeeding twenty-four hours; this was on strong soil, with south aspect, without any special manuring. Five or six full average cuttings during the season are not uncommon when the land has been highly manured and the best foreign seed has been sown. It must, however, to yield such results be constantly supplied with stimulants; and to obtain the earliest and most abundant produce it should be grown upon a dry loamy soil, what is called good wheat and bean land, in a sheltered, mild, and moist climate.

The late Mr. Dickinson published a pamphlet stating his experiments upon the growth of this grass at New Park Farm in the New Forest; he also stated that in favourable seasons a crop could be grown and cut of 12 tons per acre on the 1st of March, 12 tons on the 14th of April, 12 tons on the 14th of May, and 12 tons more on the 10th of June, 10 tons on the 10th of September, and another cutting after that of 6 tons per acre in the same season. After each mowing there must be applied a liberal dressing to produce such extraordinary crops.

We will now state our experience in the growth of this grass. When we have sown the seed in the spring amongst the wheat or Lent corn it was merely sown on the land and harrowed in and then rolled. When we have sown it in the month of August or September on a fallow preparation we used about 6 pecks of seed. Some farmers sow 2 bushels per acre, but when it is sown too thickly it comes rather weak, and as this grass in its nature partakes of the cereals it must have room to grow strong for a full crop. Our plan of seeding is to prepare the land very fine, roll with ring roller, sow the seed with Bennett's hand machine, then give two times with the chain harrow, and roll with the cylinder roller and leave it. We have sometimes grown it with broad and other varieties of clover for hay, but it grows very strong and coarse, does not make good hay for sheep, yet is good for horses and cattle; it, however, does not allow the clover to come well as a second crop, and where the land is intended to be sown with wheat out of lea afterwards it robs the soil of the nutriment required for a corn crop, as it requires the same manures. We therefore cannot recommend its growth with clover of any sort, for it is sure to prejudice and dominate their produce. It is used very much in some counties upon the hill farms where there are no water meadows on account of its early growth, and the stock flocks of ewes and the young lambs in April do remarkably well when changed once a day from rye to rye grass. After being fed down the first time it shoots up again so quickly that it requires a heavy flock of sheep to keep down the growth, and about the first week in July the land is usually ploughed and pressed and drilled with turnips, and after feeding the turnips with sheep the land is then capable of yielding a good crop of Lent corn.

There is another way in which we have seen it grown with very remarkable results in the southern and south-western counties. Where the horned Dorset and Somerset ewes are kept, either for stock or for making the early lambs for the London market during January and February, there is nothing equal to this grass. Some of the best lambs we have ever seen killed at Christmas have been made by feeding both ewes and lambs upon it, and without receiving any cake or pulse as is customary when fed on Swedes, turnips, &c. The plan is to sow the grass in the wheat, and as soon as the wheat is cut it grows with astonishing rapidity, and the succession is so quick that in ordinary seasons we have known it folded off by sheep three times in the interval between harvest and Christmas. The horned ewes when fed in this way will yield such an abundance of milk that they are enabled to maintain their twin lambs better than by any other mode of feeding; and when we consider that the horned ewes are celebrated for rearing a large number of lambs, the growth of this grass becomes a matter of more than usual importance.

#### WORK ON THE HOME FARM.

**Horse Labour.**—For several weeks this has been most seriously delayed in almost every district throughout the kingdom, on account of the prevalence of very heavy storms and dark cloudy weather, which prevents any drying of the land, even in the absence of rain. In almost every county the arrears of tillage in the preparing and seeding of turnips are very great, and the work

has now been so long deferred that a short acreage of mangold on the home farm has been sown. The same remark applies with still greater force to the drilling of Swedes, for on the mixed soils and heavy lands the ground during the month of June, nearly up to the time we are writing, would not bear the horses, much less allow of their doing tillage work on the fallows. In many districts not more than half the usual acreage has been drilled for the Swede crop, and much of what has been done was only effected at short intervals, and has left the land in very bad condition. Even upon the driest land of the hill districts nothing like the usual quantity of root seeds have been sown. The horse-hoeing, so essential for the benefit of root crops, has not been done; the hand-hoeing and singling of the plants have been so much delayed from adverse weather that in all directions the roots are hidden by grass and weeds, which when the weather changes for the better will cost as much as the crop will be worth to clean them. The fallows, too, for wheat and other crops are in the most deplorable state, being green with weeds, and also couch grass in many instances; and as the horse labour can do no good upon the fallows now work must be found for them, as it is positively injurious to the animals whilst eating green fodder to be out of work. They should therefore be employed in carting manure to the field where it is likely to be wanted, and in order to prevent too much fermentation it should not be cast up into the heap, but be drawn up, tipped, and levelled, so that the horses may draw each load upon it. This will tread it down closely and keep it without much waste or injury until required for use. Some horses may also, when not required for carting the hay or drilling for the turnip crop, be employed in carting earth from the roads and roadsides to heap, there to decay in readiness for future use, and if cast up with a roof-like top to the heap it will nearly always be dry enough for ordinary use. Earth, too, may be removed from all parts of the home farm roads and premises, where it will contribute to the neatness of the farmery; the roads leading from field to field should also be kept in shape—low at the outsides and highest in the middle. All these matters relating to farm practice will yield materials which if properly taken care of will pay for the labour, because done on certain occasions when the horses are not engaged in urgent and more important work. A large portion of the hay in the early districts has been seriously damaged. We had a season like the present about seventeen years ago, only not so backward; but those who had patience and waited until after the 21st of July secured the hay very well.

**Hand Labour.**—This will be required in connection with all the work to which we have referred. The live stock of the farm during such an ungenial season as we have hitherto experienced will require very careful management, as nearly all the most productive pastures are trodden very much with the heavy stock, and dairy cows particularly, where close feeding prevails, will require supplementary food, either of green fodder or oil cake. The weaned calves and yearling heifers should lie at night in a dry healthy paddock, although they may be fed at daytime upon low-lying meadows, otherwise they will often be attacked with "quarter ill," the most fatal disease known amongst horned cattle. Sheep likewise will now require dry ground for night folding, and if they have some cake or cracked beans so much the better, as they will then be better enabled to bear the low night temperature peculiar to the past three months. We have known farmers who this year have suffered serious losses, the ewes having died from being turned out in exposed situations immediately after being shorn. Many of the large flocks on the hills in various counties are found in very low condition by reason of the shortness of food in the spring, and are in consequence less able to bear the heavy rains and cold nights. The harvest seems likely to be very late—in fact, later than has occurred since the year 1816. In that year it is related by a reporter in the *Agricultural Gazette* that a gentleman in Surrey recollects that they cut but very little wheat, even in the forward soils of the county of Surrey, before the 29th of September, and stacked none of any consequence before the 11th of October. We can safely say that this is the latest season we have known during the past fifty-three years, during the whole of which time we have been engaged in farming and harvest operations. We must therefore advise the home farmer to anticipate this state of affairs, and be ready to make the most of the time when harvest does arrive, and endeavour to have all kinds of work as forward as possible.

#### POULTRY AND COLUMBARIAN SOCIETIES.

COLUMBARIAN societies are of old date. They certainly existed in the last century, and many of their foremost and most enthusiastic members were men of consequence and distinction in the State as well as scientific breeders of fancy Pigeons. The formation of such societies always seems to have had a twofold object—viz., firstly, to encourage the interesting pastime of breeding curious and beautiful varieties and subvarieties of Pigeons up to particular standards of ideal beauty, and the comparison among the members of the result of their efforts; and secondly, to guard all such comparisons or competitions from all trickery and dishonourable conduct, and consequently to band together those of



kindred tastes in honourable brotherhood to the exclusion of all objectionable characters.

Of late there has been a great revival of such societies. First on the list comes the National Peristeric Society, which has its head quarters in London, and annually displays to the world, at its show held in January at the Crystal Palace, probably the most splendid collection of Pigeons ever possessed by one society. This Show is not a competitive one, and we observed in the inaugural address of its President for the year that he expressed a hope, that though by its rules the Society might hold competitive shows, it might not in fact ever do so. We thoroughly agree with Mr. Hedley, a Society so largely representative of the Pigeon fanciers of the kingdom certainly adopts a more dignified line in excluding the possibility of any dispute among its members as to the respective merits of their birds. Such a show, too, as that which it now holds gives possessors of birds with some exceptional beauty, but perhaps also some counterbalancing defect, an opportunity of exhibiting them, birds which at the ordinary competitive shows a judge would at once scratch off his list as unfit to be prize-winners on account of the said fault.

There are many other provincial Columbarian Societies formed chiefly on the same model, such as those of Liverpool, Birmingham, Oxford, Manchester, that for the county of Surrey, &c. For the most part these Societies do hold some competitive shows, though the prizes are merely nominal. Few, if any, poultry societies have hitherto been constituted quite on the same principles. We believe in the palmy days of the Sebright Bantam mania there was a club of fanciers of the breed. In later days Leghorns and other particular breeds have been advanced by clubs of their admirers, and there is a Poultry Club for the general good of fanciers. The latter was established not so much for the promotion of more exhibitions of poultry, as for regulating the method and spirit in which its members should exhibit them and for protecting them from swindlers, who seemed on the point of ruining their amusement and bringing all connected with it into discredit. All such societies, if managed on strict principles honestly and fearlessly carried out, do much good by elevating the pursuit of "fancying" poultry and Pigeons.

We fear that should these lines catch the eyes of some who are little acquainted with the pursuit, or perhaps of those who are more interested in other departments of our Journal than the poultry yard and pigeon loft, that the use of the very word "elevate" may appear strange, if not out of place. "Could so domestic, so innocent an amusement," they would say, "require to be elevated?" Unfortunately it does. There is no use in concealing the fact, or in talking of an innocent amusement, when some who engage in it import into it much which is not innocent in itself, and which to outsiders appears simply disgraceful. We have occasionally found it our duty to expose abuses, and have done so fearlessly, but to all petty squabbles and vulgar personalities these columns have been closed. We wish the same could be said of all papers devoted to similar subjects. It is because a pursuit which should be honourable, and which we wish to promote, has had and is having the greatest damage done to it by unprincipled people and reckless controversy that we write these lines. There has been and there is still going on a regular contest between upright fanciers in the true sense of the word and an objectionable class of people who, by trimming, cheating, over-showing, and other discreditable practices, try to make gain out of poultry or pigeon showing. We do not for a moment say that among exhibitors there are many such characters. We know dozens of fanciers who are as honourable people as can be found; nay, some of them at present advocate and practise the extreme scrupulosity as to every kind of embellishment of their birds for shows; but it is for this very reason, that there are so many upright ladies and gentlemen whose amusement is often spoilt by a few rogues, that we write strongly, and eagerly look out for any means of saving "the fancy" from the tender mercies of the latter class. At one time their energies seemed directed to plucking hocks and dyeing feathers; and thanks to the faint-heartedness of the committees of some shows, who ought to have had more courage, these practices were encouraged by the prize money being in some cases paid to the most notorious cheat whose trickeries had been exposed. This, however, was in a measure defeated by a prompt alliance of the bulk of honourable fanciers. Now the contest seems entering on a new phase, and one not so easily to be met.

Disappointed exhibitors or their friends—the latter most frequently, under *noms de plume*, professing entire impartiality in the matter—have taken recklessly to impute any and every kind of dishonourable conduct to more scrupulous and more successful rivals. Some of the best known fanciers have of late been thus attacked without a shadow of reason. We regret that unprincipled assailants often receive encouragement from journals which are barely kept alive by sensation. The result is, that we hear fanciers on all sides inquiring how they are to be rid of such petty annoyances and controversies, and how they can get quit of a class of people to which they do not belong and with which they have nothing in common.

Our suggestion would certainly be to form societies among

themselves for comparison of their birds, and to withdraw from the ordinary public exhibitions. We hear that already many members of the Poultry Club are urging upon the Committee the desirability of holding a poultry show open to members only and with only honorary prizes. The idea strikes us as a good one; and if we mistake not, the lovers of poultry and Pigeons will ere long be reduced to hold their contests in this way unless they can devise some effectual means of protecting themselves against the rowdy class of exhibitors, who are now to a great extent supported by the subscriptions which more worthy people give towards shows under the idea that they are promoting the improvement of the breeds of poultry. Money seems to be the root of this evil as well as of many others; and we believe that the majority of genuine fanciers would be quite content with the honour of prize cards and rosettes. A few special and more tangible prizes in the shape of cups might be awarded, as at present, to the best among several winners of first honours; but rewards in the shape of hard cash should be excluded. Some benefit would still accrue to the successful exhibitor from the increased value of his prize stock, and this might well be considered to counterbalance the cost of carriage to and from the show. Such an attempt would of course be an experiment, but one which we should much like to see tried in a place where there would be a fair chance of the working expenses being covered by the money taken at the door. It certainly would tend to the elevation of the fancy, and we hope the Poultry Club or some other club of amateurs may ere long see its way to making it.—C.

## HINTS FOR YOUNG AMATEURS.—No. 8.

### POUTERS.—Part 2.

NEXT I come, among the colours of Pouters not so highly cared for as high fancy birds, to Chequer. I grant at once that this is not nearly so beautiful a colour as Mealy. Chequer seems to be the natural and general colour of common dovehouse Pigeons where there has been no mixture of fancy sorts, as in old manorial dove-cotes, and in the Pigeons kept at out-of-the-way farm houses; very out-of-the-way they must be now-a-days for no half-bred fancy birds to have got among their stock.

In this respect there is now a great difference both as regards poultry and Pigeons. Twenty years ago the fowls about farm houses were of the commonest kind, very gaunt interbred bad birds; or if any selection had been attempted it was in favour of Dorkings, the farmer's favourite being the Speckled Dorking. But now all is changed. In driving about the country, or when staying in different counties, I always notice the poultry, and if they be not strictly fancy breeds you see there has been an admixture. The size of the cocks marks Brahma blood, as also their gait; then half-bred Hamburgs abound everywhere. Here you see fair Spanish, there you see half-bred Game, and so on. So also with the Pigeons sunning themselves on roofs or flying around barns and stables. The various colours mark the admixture—half Tumblers and half-bred Dragoons, both very prolific sorts, are very general indeed. This admixture as to Pigeons is a sideways proof of the advance of the fancy, but has been a sort of injury to the old dovehouse breed, which was select, and in its line beautiful; whereas half or quarter Fantails and other half breeds are not beautiful.

But go back a few years, and at all farms there were dovehouse Pigeons of a pure type, and these were Chequer, a kind of slate colour of two shades darker and lighter, which gave the bird a sort of chequer-pattern-looking plumage. There are now among Antwerp Pigeons Red-chequer as well as Blue-chequer; but though the greater, by far greater, number of dovehouse Pigeons were of this blue chequer colour, now and then they threw the bright pretty blue with black bars, such as we see at shows in perfection in Pouters, and particularly Dragoons. The two colours are clearly allied. Then I have bred when a boy blue Pouters from Chequers, and the reverse. The Chequers are cheap, and so fit for the young amateur, and he may sometimes breed good Blues from them provided there be good blood in them. They, as a rule, are somewhat thick in girth, which is a fault, but they often have very large crops. A cock Chequer and hen Blue look very pretty. I remember a small tradesman who had such a pair, and kept them in a warehouse in which he frequently came; the hen particularly was tame to sauciness, and would perch on her master's arm or shoulder, soliciting a caress like a cat.

In addition to Mealies and Chequers there are white birds with splashed plumage, here and there dark feathers, these the result of whites being crossed with other colours in order to improve their crops, for white Pouters have slenderness and grace naturally, but often lack size of crop. These mismarked birds are cheap, and simply as Pouter Pigeons are among the best. I have seen splendidly shaped birds so coloured; now and then only one feather, or three or four of the wrong colour. I knew a fancier who had such a bird with one feather dark, all the rest white. I need not say that the dark feather was absent at shows!

There are inferior Mealies, called in Scotland Sandies—part mealy, part red. At the Crystal Palace Show for more than one season appeared a magnificent dun-coloured Pouter, to which no

judge could possibly refuse a prize if there was a class suitable for him to appear in. There are also, as to colours, what I have called "the weeds of the loft"—i.e., small undersized birds, but not seldom of exquisite colour. These may be bought and crossed with some large Mealy or Chequer or splashed birds.

Next a few general remarks as to the management of Pouters. Remember no high-up ordinary box outside a house is suitable for them. They would have to stoop to get in and out, and soon be spoiled as to form. Then they would grow very wild and fear the approach of man, and not show off their beauty. Some place on the ground floor is best for them—some outhouse or place built on purpose, so that being on the ground floor the owner can walk amongst them and pet them more readily. Good-sized tea chests with or without bars in front make good boxes for them. They should be 20 inches at least in height, and 2 feet square. They may be bigger with advantage, and partly divided so as to form two nesting places, and to keep the half-grown young birds from getting on the eggs with the old bird, and so teasing her and spoiling the eggs.

Pouters are well known as being bad nurses of their young, which as a rule have after the first fortnight to be brought up by other Pigeons or by hand. If a fancier has room and keeps a number of strong Antwerps or Dragons or half-bred Runts, and can transfer his Pouter eggs to those birds who have laid at the same time, all trouble is of course over. The nurses will not know the difference. Changing the birds often does not answer; but if, as is usually the case, a young fancier keeps Pouters only he can raise the young by hand when their parents begin to neglect them, feeding them on beans soaked in water, a little warm water being added at feeding time to make the beans just as warm as they would be if ejected from Pigeons' crops. Nurses kept with Pouters do, to my mind, quite spoil the appearance of the loft. Children soon learn to be very expert feeders of Pouters, their little lissom fingers being very suited to hold the beak and beans. After a little practice a fancier can feed his young stock very rapidly, being guided as to quantity by the fullness of the crop.

There is this great advantage of bringing up Pouters by hand, that they become tame from the first. There should be kept near them some small-sized food in a shallow box or tray, which they will learn to pick at when hungry, and so become early feeders of themselves. They are apt to become very lazy in this respect, and run open-winged to their feeder when they are old enough to feed themselves; however, they must never be starved, or they will become stunted in their growth. After feeding them dip their beaks in water, and they will soon learn to drink.

Lastly, I would say that no Pigeons give more pleasure than Pouters, they are so conceited, grotesque, and funny; also they are noble-looking birds, and quite different to all other Pigeons. All fanciers who have ever kept them have a tender place in their hearts towards them for life. If they can occasionally be let out to fly it is well, and they look so noble on the roof of a building or strutting about a courtyard. They walk into the kitchen for crumbs in the most confiding manner. If their owners keep a cat it must be broken-in not to touch the Pigeons. I have had cats which have walked among them and the birds not the least alarmed, and the cat never thought of killing them; the secret was they were brought up as kittens with them, and never therefore regarded them in the light of food. For the sedentary and stay-at-home fancier there are no Pigeons to be compared to Pouters. They become intimate pets, and almost friends. A room in a house with a wired enclosure for air and exercise suits them admirably. We are told that some of the poor prisoners in the Bastille kept Pigeons; they must have been, I should think, Pouters.—WILTSHIRE RECTOR.

### VARIETIES.

MESSRS. E. WEBB & SONS' Museum of Seeds, Roots, Grasses, &c., at the Shrewsbury Meeting of the Shropshire and West Midland Agricultural Society was, we are informed, one of the greatest features of the Show yard, being entirely new, of great length, and beautifully fitted up. Roots of immense size were shown in excellent condition, having kept perfectly sound throughout the past severe winter, proving the great value of the strains. The representations of flowers, grasses, &c., upon the pilasters at the front of the stand were very fine, and the same may be said of a beautiful large drawing in water colours, which gives a view in perspective of Messrs. Webb's extensive seed farms at Kinver, which are between eleven and twelve hundred acres in extent. Excellent specimens of the true Prickly Comfrey were exhibited, and Mangolds, Swedes, and Turnips, &c., as growing for seed, also an extensive and admirable display of Grasses and Clovers in growth. The specimens in grain and straw were superior, and vegetables excellent. The display of annals and other flowers in bloom was a great attraction. Samples of grass, farm, vegetable, and flower seeds in upwards of a thousand bags were exhibited. There was also a rich display of silver cups, which with other prizes value upwards of £500, are presented by Messrs. Webb & Sons for competition at their great Root Show at Curzon Hall, Birmingham, in November next and at the principal meetings

of the year. Upwards of 25,000 specimens were exhibited on the stand, representing the produce of the various specialities in farm and garden culture as identified with the name of this eminent firm.

—In addition to the silver medal awarded by the Royal Agricultural Society to Messrs. James Carter & Co., as recorded on page 38, we learn that similar awards have been granted to Messrs. W. Paul & Son, Waltham Cross; Messrs. G. Paul & Son, Cheshunt; Messrs. W. Cutbush & Son, Highgate; and Messrs. Little & Ballantyne, Carlisle; in consideration of their services in decorating the embankment projecting into the exhibition grounds at the late Kilburn Show.

—We have received the prize list of the Hemel Hempstead Poultry and Pigeon Show, October 1st and 2nd, together with the rules and regulations for the incubator tournament, the chief prize being a gold medal, value ten guineas. Entries for the Poultry Show close on September 13th, and for the incubator contest on August 23rd. Rules, &c., can be obtained from the Rev. Herbert K. Peel, Abbot's Hill, Hemel Hempstead.

—THE first annual Exhibition of the Surrey Bee-keepers' Association was held at Guildford on the 17th inst. Owing to the bad season there was not a large display, but the company was numerous. The first prize for the best hive of honey was taken by Mr. William Heathorn, of Godalming. Prizes for the best and most economical hive were taken as follows:—First, Mr. Herbert Figgie, Brede, Sussex; second, Mr. J. Lee, Bagshot Surrey; third, Mr. S. J. Baldwin, Norwood, Surrey. There was a large and varied exhibition of the appliances used in apiculture, and some capital models of hives in full work.

—THE *Mailstone Journal* says, "The broods of young partridges have suffered fearfully by the excess of rain in Surrey and Kent, and hundreds of young birds have been picked up dead from disease caused by the wet. Young wild rabbits are also found dead outside the woods and plantations. At present the game season does not augur well for sportsmen."

—MUCH damage has been done in various districts by the storm of wind and rain which prevailed during Saturday, Sunday, and Monday. In Staffordshire several trees were blown down, and many acres of meadow land were submerged, and hay is rotting in the fields. In the neighbourhood of Bath the gale was very violent, and fruit trees, corn, and hay crops, and horticultural produce received much injury. In Oxfordshire the floods have been very high for the time of year, and great damage is done to the crops, especially to barley, which is a complete failure on the heavy lands. At Portadown, Ireland, the rain fell in torrents, and maintained a downpour of such volume that within twenty-four hours thousands of acres of wheat, corn, potatoes, and hay were submerged. From many other, indeed most districts, we have gloomy tidings relative to the fodder crops particularly and farming prospects generally.

—THE HOPS IN KENT.—Under most favourable circumstances the hop crop cannot now prove satisfactory. Cold nights, wet days, and high winds, superadded to a serious attack of vermin, have well nigh crushed the hopes of the Kent planters. The crop prospects daily become worse and worse. The foliage is assuming a sickly yellow appearance, the leaves are now covered with insects, and the plant is injured with wet and cold. The grapes, Jones's and inferior goldings, are in a particularly critical state. From all parts of Kent comes the cry for hot weather, and if we do not have it soon the crop failure will be more disastrous than it has been for many years.

—MR. W. A. GIBBS, Gilwell Park, Chingwood, writing on saving hay in wet weather, states that he lent one of his hay dryers to Mr. Ashcombe, a practical farmer. He started it at 9 A.M., and in ten hours had dried and stacked the produce of ten acres, estimated at one and a half load per acre. This was unripe, rank, weedy grass, which had been mown about twelve days, and left on the swathe quite untouched. The hay dryer was wholly uncovered and heavy showers fell at frequent intervals upon the hay as it was brought in from the field, and whilst it was being dried. The cost of saving this hay is as follows:—Engine and man as hired, £1 5s.; hay dryer and stoker, ditto, £1 10s.; coal for engine, 6 cwt. at 1s. 6s.: coke for dryer, 22 cwt. at 1s. £1 2s.; two men to feed and one to take away, at 8s. 6d., 10s. 6d.; extra man in field to pitch, 3s. 6d.; extra man in field reloading, 8s. 6d.; extra carting, 1s. per acre, 10s.; total £5 10s. 6d. 110s. for 10 acres; 11s. per acre.

### BRITISH BEE-KEEPERS' ASSOCIATION'S ANNUAL EXHIBITION AT SOUTH KENSINGTON.

THE fifth Exhibition of this active Association, although the summer (?) has at present been so terribly unfavourable to the interests of the bee-keeper, is fully as varied and extensive as any that have preceded it, although the honey classes contain but few entries and fewer exhibits. The driving competition in the bee tent on Tuesday presented a novelty in the appearance of the Editor of the *Alsatian Bee Journal*, M. Demaler. He operated much

as did his English *confères*, but supported the edge of the inverted skep by his forehead. He did not come into the prize list, as, singularly, his queen refused to rise. After all the bees had left she was found held captive by a wandering bee from one of the hives previously operated upon, which had clasped her body and so severely stung her, that, as she was torn off, the terrible though little dart was left behind in the body of the poor queen. The winner was Mr. J. Walton, who caught his queen in three and three-quarter minutes from the moment of leaving to fetch his skep, and finished the operation in six minutes forty seconds. Mr. Abbott, jun., stood second (seven and a half minutes), and Mr. S. Baldwin third.

The observatory hives (ten entries) contain some notable novelties. Mr. C. Abbott first; Mr. Freeman, with a hive already described in these columns, second; and Mr. C. T. Abbott third with a hive carrying a new and very good form of hinge. An extra prize was awarded to, but declined by, Mr. Cheshire for a new kind of observatory. The prize was declined on the ground that the hive was not staged at the time the rules required. Mr. Lyon shows a hive in which an effort is made to remove the glass at the time the combs are closed together, so that in fact the colony forms an observatory and a stock hive by turns. The idea is excellent, but it is very faulty in details.

In frame hives Mr. J. M. Hooker's, the second of Kilburn, stands first. This capital hive has been described in a late issue, and as a more detailed account with an illustration of it will presently be given in these columns it may now be dismissed. Mr. Abbott, placed second, does not again show the bottle for hot water. The hive is large and complex, and its crate containing some excellent sections is far from convenient. Mr. Baldwin is third with a very neatly arranged twin hive, in which the side entrance from the second stock is well managed, and can by a very neat reversion of a block be immediately obliterated. The Philadelphia hive of Mr. Neighbour is highly commended. Most of the exhibits in this class bristle with the zinc queen-excluder. The use of this perforated metal is not without its disadvantages. Making the body of the hive large enough and giving the queen there enough to do will generally save supers from suffering from her intrusion, even if they be placed immediately over the frames. An analysis of the remaining classes will be given in the next issue.

### FEEDING BEES NECESSARY.

COMPLAINTS reach us from many places that "bees are not doing," that "hives are full of drones and gathering no honey," that "swarms are not building combs fast," that "brood is fast disappearing from the combs," that "white drones are being cast out and old black ones are being killed." All these things in such a season as the present one are the natural results of felt or anticipated starvation. They often happen when bees are insufficiently fed. It is difficult to convey a correct idea of the amount of food necessary to keep a strong hive in full action or prosperity in the months of June and July. Hives without stores then require much artificial feeding in rainy or cold weather. "How much?" is a question of great importance in apiculture. Many bee-keepers this year have been hoping against hope for the weather to take a favourable change, and have not fed their bees continuously up to the prosperous point. The other evening I met one of the active apiculturists of this place, who told me that "it took half his wages to keep his swarms alive just now, and that each swarm required 2 lbs. of sugar a week to save it from wasting and death." This, be it remembered, is not keeping swarms up to the prosperous point solely by artificial feeding, it simply keeps 80,000 bees alive. Swarms in a thriving condition build combs rapidly and fill them with brood. How much honey or syrup is required by bees to enable them to secrete wax enough to fill an ordinary sized hive with combs? This question cannot be answered accurately, for in warm weather comb-building goes on much faster than in cold weather. Liebig says that it takes 20 lbs. of honey to produce 1 lb. of wax. This may be an over-estimate; but if we reckon that every good full hive has 2 lbs. of wax in it, which cannot be obtained or secreted from less than 80 lbs. of honey or syrup, we shall be able to make a good guess how much feeding is necessary to a swarm hive in full tilt of progress in such honeyless weather as we have had during the last six weeks.

There comes next for consideration the question of brood-rearing, which is all-important, and cannot go on without a great consumption of food. Every cake of brood is valuable and heavy—built up at considerable expense to the hive. In times of poverty or straitened circumstances bees wisely decline to set eggs and rear brood. They will not starve themselves and thus do evil that good may come. There are thousands of hives now (middle of July) in this country straitened for want of food—ceasing to breed and thus becoming weaker. In every case a great check is given to and loss sustained by a hive when it stops breeding from want of food. The pinch of poverty may not be really felt, but if anticipated or feared breeding is stopped.

The other day (10th of July) I saw seven hives standing in a

cottage's garden and I stepped in to see them. They had multiplied from two stocks this year—two natural swarms from each stock, and a large virgin swarm from one of the first swarms had just been hived that day. There I had before me seven strong hives of bees, capable of doing much work, from two stocks in a most unfavourable season. The owner of them, Mr. Jack, is a most capable and successful bee-keeper. He is an excellent feeder, and has at comparatively little expense increased his hives from three to seven, and in value from £4 to £10. In favourable seasons for honey-gathering artificial feeding of course is not necessary. In such seasons bees gather honey enough to build combs, rear brood, feed themselves, and store some away for future use, either for themselves or their owners. What industry is necessary on the part of bees to supply their own daily wants, furnish their houses, and feed their young! And this industry never fails them. At this advanced time of the year, with hives without stores and combs nearly empty of brood, feeding must not be forgotten. If the weather become favourable bees may gather honey enough yet, and recommence to breed; but if the weather continue cold and unfavourable, we earnestly urge all bee-keepers to commence at once to feed their bees constantly and vigorously with a view to get their hives full of brood, and thus have plenty of young bees in them before winter. In the absence of better weather this is the only thing that can save them from extinction. "Feeding or death" has been the cry of the last few months, and those who have attended to it have been their own best friends and best bee-keepers.—A. PETTIGREW, *Carlisle, Lanarkshire.*

**PROTECTION AGAINST THE STINGS OF BEES.**—Mr. M. M. Balbridge, an American bee-keeper, advocates, where such an aid is needed, a bee veil for protecting the face and neck; and for the hands—in case the bees are inclined to sting them, which is not often—"the very best protection is to wash them with a weak solution of honey and water, and let it dry upon them. When thus treated the most irascible bees will seldom attempt to sting them. Gloves of any kind are a nuisance, and should never be worn by a live bee-keeper."

### OUR LETTER BOX.

**JERSEY AND ALDERNEY CATTLE (B.).**—The Jersey and Alderney breeds of cattle have a strong resemblance, but not so the Guernsey, for they are a distinct breed and well maintained in all their purity up to the present time. We have kept both sorts for more than forty years, and we constantly see them as they arrive from the islands.

**LINCOLNSHIRE BEE-KEEPERS' ASSOCIATION (A Reader).**—This Association will hold its fourth annual Exhibition of honey, bees, hives, and apian manipulations in connection with the Long Sutton Agricultural Society's Show at Long Sutton on September 17th and 18th. Entries close September 8th. Hon. Sec., R. H. Godfrey, Esq., Grantham.

**HIVE UNSATISFACTORY (W. J. W.).**—The dull wet honeyless season is the cause of your bees casting out drones and brood. Read Mr. Pettigrew's article on feeding bees in the present number, and act in accordance with the suggestions contained therein.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.						Rain.
	Baromet. ter at 32 and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
1879. July.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	Oun.
We. 16	29.917	56.3	54.4	E.	57.0	64.6	50.7	93.0	49.7	0.020	
Th. 17	29.820	61.8	58.7	S.E.	56.8	66.3	53.2	91.6	50.6	—	
Fri. 18	30.023	64.7	59.8	N.E.	57.2	70.5	53.4	118.9	51.3	—	
Sat. 19	30.011	61.8	57.9	E.	57.5	71.2	53.4	90.5	50.1	0.914	
Sun 20	29.523	58.0	57.0	S.W.	58.0	66.8	53.2	112.3	54.7	0.287	
Mo. 21	29.412	54.3	52.7	W.	57.3	59.5	52.3	67.8	52.7	0.318	
Tu. 22	29.592	58.7	54.8	N.W.	56.5	64.3	51.3	101.9	48.2	0.010	
Means	29.737	59.4	56.5		57.2	66.3	52.8	97.1	51.0	1.4 99	

### REMARKS.

- 16th.—Dark oppressive morning, fine afternoon; rain after 8 P.M.  
17th.—Cloudy and very close heavy day, misty rain at 4.45 P.M.; fine evening.  
18th.—Fair but dull morning; fine warm pleasant afternoon with sunshine; fine calm evening.  
19th.—Misty dull morning; at times dark and very stormy-looking; heavy rain at 1 P.M. for about an hour; damp dull afternoon and evening.  
20th.—Heavy rain during early morning, ceasing at 8.30 A.M.; fair till 2 P.M., showery afterwards; strong gale 3 to 5 P.M.; wet evening.  
21st.—Gale of wind and rain during night; slight rain nearly the whole day.  
22nd.—Cool but much more pleasant day; slightly showery; fine evening.  
Continued damp and cold, the entire characteristics of the weather being strictly autumnal.—G. J. SYMONS.

### COVENT GARDEN MARKET.—JULY 23.

WE have now gone through the bulk of the Strawberry crop, all reaching us together, and considering the weather in very good condition. A general decline has been experienced in all classes of fruit, the demand having considerably fallen off the last day or two.

## WEEKLY CALENDAR.

Day of Month	Day of Week	JULY 31—AUG. 6, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock before Sun.		Day of Year.
			Day.	Night	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.	s.		
31	TH		74.9	50.0	62.4	4	33	7	49	6	56	1	42	12	6	10	212	
1	F		75.6	50.4	63.0	4	35	7	47	7	24	3	2	○	6	7	213	
2	S	Liverpool and Southampton Summer Exhibitions.	75.3	50.9	63.1	4	36	7	46	7	46	4	25	14	6	3	214	
3	SUN	8 SUNDAY AFTER TRINITY.	74.9	50.6	62.8	4	38	7	44	8	3	5	46	15	5	58	215	
4	M	Ryhope Horticultural and Poultry Exhibition.	75.9	50.6	62.8	4	39	7	42	8	17	7	3	16	5	53	216	
5	TU		74.5	50.9	62.7	4	31	7	41	8	31	8	17	17	5	48	217	
6	W		73.3	50.8	62.0	4	33	7	39	8	45	9	29	18	5	42	218	

From observations taken near London during forty-three years, the average day temperature of the week is 74.9°; and its night temperature 50.6°.

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## THE SUMMER PRUNING OF FRUIT TREES.

**N**UCH has recently been published on the fruit prospects of the present year, and generally speaking the reports are extremely gloomy, almost the only exception being the jubilant tone of Mr. Peach's letter on page 67. Mr. Peach not only informs us that his fruit crops are satisfactory, but, what is important, he states what he considers has been the cause of his success. Possibly there may be some who will think that your correspondent has in some way or other enjoyed an unusual share of good fortune. He may possibly have had some local advantages which, however, he may not have perceived at the time, but still it is well to remember that good fortune generally follows good management.

Next in importance to the unfortunate failure of fruit crops this year—a failure that cannot be prevented—is the prospective failure of the crops next year unless special means are adopted to avert the calamity. I do not plead guilty of being either a croaker or an alarmist, but I hold it a matter of prudence to do all in my power to avoid a possible danger, and one of the dangers that I apprehend is a fruit failure in 1880, making the fourth if not the fifth in succession, which is a very serious matter. It is far better to anticipate failure and endeavour to prevent it than to wait until it arrives and grieve over it; hence I do not consider my note of alarm at all premature, nor is the call to action made a moment too soon.

If I am convinced of the soundness of one point of practice in gardening more than another this year, it is that of summer-pruning fruit trees. Much has been said, and will doubtless be said again, against the practice referred to, and probably instances may be cited which appear to establish its inutility; but at least an equal number of instances can be adduced of quite an opposite tendency.

I am not an advocate of an extreme course of summer pinching and pruning of all trees and under all circumstances. I do not adopt the practice of crippling the growth of young trees, and consequently am unable to rejoice with Mr. Peach on the conspicuous precocity of his young three-year-olds. One of my tenets is, that a fruit tree should be allowed to attain a size capable of maturing the fruit without any great strain on the tree's resources before it is encouraged to produce a crowded crop. I go further, and say that if it will then bear, as in some seasons it certainly will, without any great amount of pruning, I can very contentedly let it alone. In point of fact where trees bear freely the fruit restricts their exuberance, and what we seek to effect artificially is produced naturally, and a balance is maintained between foliage and fruit. But there has been no balance lately; fruit trees have lost their equilibrium, there have been no weights in one portion of the scale, and the growth has become excessive and essentially unfruitful in its nature. This is not only so, but matters are growing worse every day. Why do fruit trees grow so luxuriantly? It is simply a struggle of branch with branch and leaf with leaf in a determined effort to obtain light. It is in the

nature of a tree to bear fruit, but it cannot become fruitful without the action of light on its foliage. I advocate summer pruning now so as to admit light to the foliage, instead of the tree spending its strength and wasting year after year in struggling for the light which it must have to render it fruitful.

We have been told of trees that are seldom or never pruned which produce heavy crops of fruit, whilst others which are pruned both in summer and winter are barren. Old orchard trees for instance, are often pointed out laden with fruit, while younger trees that have been regularly pruned are fruitless. Granted; but how long have the veterans been growing? One thing is certain, they have in many instances grown until they have become comparatively exhausted and can grow no longer, and consequently the light exerts its beneficial influence on the foliage at the tips of the shoots, and fruit spurs form there and nowhere else. But it may be pointed out that younger trees that are not pruned are also fruitful. Yes, they may be when they stand singly in rows by the side of garden walks, and in that case they are actually less crowded than if they were pruned in winter, unless—and this is the real point of importance—they had attention also during their period of growth. It is the old stereotyped practice of pruning severely in winter and not pruning in summer, that destroys the productiveness of fruit trees. It is further urged that the "market growers" of fruit who seldom prune their trees, but yet plant them closely so as to form "woods" or "plantations of fruit," invariably have heavy crops. Do they? My notion is that such cultivators as Mr. Dancer, whom we often read about, only have heavy crops in favourable years when the sky is bright and the sun hot. Are trees thus grown crowded with fruit this year? If they are I will admit my views on the subject are wrong; but if they are not, I have a right to claim that the theory advanced is sound. My evidence that it is so is the condition of a great number of fruit trees at the present time. Mr. Peach's trees that have been closely pruned in summer appear to be laden with fruit. I know of some others which have been treated in much the same way as those of your correspondent that are similarly productive this year. "But the pruning has not done it," I can imagine someone remarking. Well, if the summer pruning has not contributed to the fruitfulness of the trees in question I should like to know what has; and I further want to know why other trees in the same garden that have grown more naturally by having had little or no pruning, have also little or no fruit? Some old nearly exhausted orchard trees have some fruit on them—trees that have naturally produced short growths and few leaves, but more vigorous half-grown trees are fruitless.

The last summer was dull and wet, and so also was the summer of 1877, and the present season so far has been worse than either. Fruit trees are consequently, as a rule, excessively luxuriant and unduly crowded with wood and foliage. The leaves are large and flimsy, and the wood succulent. If such trees produce blossom, it is by no means certain that fruit will follow. When the wood of fruit trees is hard, containing a minimum of pith, the foliage is

generally somewhat small but stout in texture, and the blossom appears to partake somewhat of the nature of the tree and is hard too. At any rate it appears to resist the effects of a brush of inclement weather better than that produced by crowded and exuberant trees. What is wanted to produce healthy fruit spurs and well-developed blossom is well-developed foliage around the spurs and at the base of the shoots. It is on that foliage that the sun must shine or light act. Light, wholesome, life-giving, and fruit-producing light, has too long been obscured by the clouds floating between the trees and the sun; let us not make the obscurity greater by permitting a crowd of foliage to obstruct its rays from the parts that can so well and so profitably utilise them.

There are thousands of so-called pyramid and bush fruit trees at this moment into the centres of which the light can find no entrance, and leaves and spurs are in semi-darkness. If such trees produce fruit it is by chance and not by culture. The remedy for crowded trees and imperfect spurs and foliage is the knife and pruning shears, not applied in winter after injury has been done, but in summer—now, when it may be prevented. Neither is the mere shortening of the current year's growths in all cases sufficient. It is important to see if what may be termed the main or permanent branches are not too numerous; if they are, remove them at once, for there cannot be a better time for performing the operation. This only applies to trees that have not been too long neglected, for if darkness has already done its work, and the branches are leafless and spurless, the mere admission of light will not cause other spurs to form on the naked branches, hence it is not usually advisable to interfere much with the growth of old trees that have seldom if ever been pruned. To younger and much valued trees of all kinds summer pruning may be done with great advantage, but for the work to be in the highest degree effective it must be done promptly.

The main branches being sufficiently thinly disposed, the young growths should be at once shortened. If three or four good leaves are left at the base of each shoot they will be sufficient for this purpose; the terminal growths, if strong, also being shortened, but not nearly so close. In a few weeks after the general pruning other growths will have issued and must be removed with the finger and thumb before they become strong enough to need the knife. The work will thus be done expeditiously, and crowding will be averted. These remarks apply equally to trees on walls. Nothing but weeds contribute so much to the untidiness of a garden as neglected wall trees, and nothing contributes more to the barrenness of the trees than too long deferred or clumsily performed summer pruning. Of course such trees as Peaches and Nectarines, which produce fruit chiefly and young wood, must not be spurred as indicated; but even these trees may with advantage receive more pruning in summer than they commonly receive. "Lay in the young wood of Peaches" is an axiom, but of equal importance is some such injunction as this—"Cut out the old wood to make room for it." Much growth can be spared from Peach trees now, and it can be removed with far greater advantage now than in the winter. Winter pruning is too much indulged in, and summer pruning proportionally neglected. Reverse the practice and head the trees, and better crops of fruit will follow; and, what is of especial importance this year, commence the change at once. Begin now, for wood that is made after this period is not only of no value in itself, but has the direct and immediate effect of impairing the fruitfulness of other portions of the tree which it deprives of the fruit-producing elements—air and light.—A NORTHERN GARDENER.

### THE CULTIVATION OF SHOW AND FANCY PELARGONIUMS.

ALTHOUGH these varieties are so popular, and although the best varieties are easily procurable from the nurseries at a very cheap rate, still they are not so well or so largely cultivated as they deserve to be, and I believe this is chiefly due to the want experienced by cultivators of suitable houses. The best structures that I am acquainted with for the cultivation of these plants are low span-roofed houses running north and south, ventilated freely at both sides and at the top, and so arranged that the plants can all stand near to the glass. In such a house with fairly good treatment the growth will be remarkably free, vigorous, and short-jointed, and the bloom eminently satisfactory. To attempt to cultivate them in houses where they are a considerable distance from the glass and crowded among

other plants, or to attempt their cultivation under the shade of Vines, fruit trees, or climbers, will only result in disappointment, as the growth will be weak and long-jointed, the plants unsightly, and the blooms, if any, small and few in number.

In speaking of their cultivation I will first refer to propagation; and although the general practice both in the nurseries and in private establishments is to insert the cuttings and propagate the stock required when the plants are cut down after blooming, that is not the best time for propagation if vigorous specimen plants are required. I think the chief reason why autumn propagation has become so general is that cuttings are then much more readily procurable. I have found that the best time is in April or in May, when the plants are making vigorous growth. Cuttings taken then and placed in a moderate bottom heat will quickly root and grow more strongly, and they will ultimately make more handsome specimens than those struck in the autumn.

As soon as the cuttings are well rooted they should be potted singly in small pots in a compost of two parts good turfy loam added to one part of well-decomposed manure (that from spent Mushroom beds I find very suitable), a little leaf mould, and some good sharp sand. In all future repottings I use the same compost, omitting the leaf mould. The pots should then be placed upon a shelf close to the glass in a moderately warm temperature. The plants must have regular attention in watering, and be sprinkled overhead with the syringe once a day. As soon as the pots become nearly filled with roots the plants must be shifted into pots two sizes larger, and all blooms must be picked off as soon as they appear. The plants should be stopped when they are from 4 to 5 inches in height, and when the side shoots have attained a similar length they should again be stopped. About the middle of June the plants should be placed in a cold frame, where they may remain through the summer, receiving regular attention in watering, stopping, and tying out the side shoots, which are very likely to break off in training.

If the plants are growing freely they will require a second shift during the summer into pots 2 inches larger, but care should be taken to have the pots well filled with roots before winter. During the winter the plants should occupy a cool, airy, and light house. They should be kept moderately dry at the roots, but not allowed to become dust dry. Soon after the middle of February they may receive their final potting, and then place them in a temperature of about 50°, ranging to 60° with sun heat. Here they will grow freely, and as soon as the roots reach the sides of the pots weak liquid manure should be supplied at least twice a week. Towards the middle of March the shoots should be stopped for the last time previous to blooming. If growth is vigorous a sprinkle overhead with the syringe early in the morning will encourage healthy growth. I would not advise syringing them in the evening, as if the water remains long upon the foliage it is apt to produce "spot" and destroy many of their best leaves. Care must be taken to keep the plants near the glass, not too crowded, and to ventilate freely whenever possible.

Attention must also be paid to fumigating as soon as aphides appear. It is a good plan to fumigate twice in the evening, and again early the following morning as soon as the first blooms commence opening. It is well known that to fumigate when the plants are in full bloom would cause all the blooms to fall that were then open. During the time the plants are in flower they should as far as possible be kept in a cool and moderately dry temperature. As soon as flowering is over they should be removed to an open position out of doors where they will ripen the wood previous to pruning them, which should be done in two or three weeks after placing them out if the wood appears ripe and firm. From the time they are put out of doors till growth has commenced water should be sparingly supplied, but a sprinkle overhead with the syringe each morning after pruning will greatly assist them.

As soon as the young growth is fairly started turn the plants out of their pots, shake the soil from the roots, cut any long straggling roots back, and repot the plants in fresh compost, employing pots as small as can be conveniently used. Growth should then be encouraged, so as to have the pots well filled with roots previous to November, when the plants may be removed to their winter quarters and receive the same treatment as in the previous winter. In training the plants for exhibition purposes a low convex shape is most effective, and a ring of wire fastened to laths some 3 inches from the outside edge of the pot will be found most useful for training to. For



conservatory decoration a more upright bush shape is generally preferable, when the wire is better dispensed with.

In the cultivation of the fancy varieties nearly the same treatment is required as that I have attempted to describe for the large-flowering varieties, but for the production of fine specimens they are much better grafted upon one of the strong and free-growing large-flowering varieties. Many of the best varieties of Fancies are so tender in constitution as to be liable to suddenly die off at any time, but more especially during the winter months. This danger is very much obviated by grafting, as well as by that means securing a generally more vigorous growth. The best time for grafting is in the month of June; and for stocks, cuttings of strong growers struck the previous autumn and kept in large 60's or in 48's, should be selected and cut down to within 3 inches of the soil, and then be "whip" or side grafted. The scions should be selected from healthy and moderately firm shoots, and cut back to about 1 inch in length. When grafted the plants must be at once placed in a close frame, where they may remain till they commence growing. They will require shading from bright sunshine, and the inside of the frame must be occasionally sprinkled with the syringe. In pruning back Fancy varieties after they have done blooming the wood should not be as hard and ripe as in large-flowering varieties, or they will not break freely. It is best to do what pruning is required as soon as they come out of the house where they were flowering, and then stand them in a cold frame till they break, sprinkling them overhead daily with the syringe.

For flowering in the months of February, March, and April, free varieties from among the large-flowering section should be selected and cuttings taken not later than April. When rooted pot singly in 60's and place them in a cold frame. When the pots are full of roots repot the plants into 6-inch pots, in which they may be allowed to bloom the first season. Return the plants to the frame till the roots reach the sides of the pot again, when the plants may be placed upon a bed of coal ashes out of doors in the full sun. They should now receive liberal supplies of liquid manure, and growth must be encouraged as much as possible. About the middle of September they should be taken indoors and placed upon a shelf in a greenhouse near the glass; from then till Christmas water sparingly, and maintain a freely ventilated moderately dry atmosphere in the house. Early in the new year they should be removed into a warmer house, and again be placed upon a shelf near the glass where there is a temperature of 50° to 55°, there they will soon commence to grow and should be assisted with weak liquid manure. As they come into bloom remove the plants to the conservatory.

After flowering they should be taken to a cold frame for a fortnight to harden them off gradually, when if the weather permits they may be placed out of doors in the sun and kept rather dry to ripen the wood; they may be then cut back and treated the same as advised for the later-flowering plants. Care must be taken not to overpot them, an 8-inch pot is quite large enough.

The following varieties I have found very suitable for early flowering:—Alma, Clothilde, Gauntlet, Dr. Andry, William Bull, Kingston Beauty, Leviathan, Triomphe de St. Mande, Mrs. Lewis Lloyd, and Deademona.—W. K. WOODCOCK, *Gardener to F. T. Mappin, Esq., Thornbury, Sheffield.*

[Read at the Sheffield and Hallamshire Gardeners' Society's Meeting.]

### STRAWBERRIES.

OUT of fifty varieties of Strawberries on trial in the Experimental Garden this season on a piece of strong Strawberry land, it may interest your readers to know that of the older varieties Sir Joseph Paxton has, taking all circumstances into consideration, attained, or rather maintained, the position of pre-eminence; it has set quite as well or better than all others, and the fruit is large, firm, and of good flavour. Keens' Seedling and Vicomtesse Hericart de Thury both set and fruited freely, but the former has neither the firmness nor flavour, and the latter has not the size of Sir Joseph Paxton. On the other hand, President set very badly. Amongst the newer varieties Helène Gloede has been very good, and is in all respects an excellent Strawberry, but later than Sir Joseph. President Delacour and Auguste Boisselot from Mr. Veitch, Foreman's Excelsior from Mr. Boothby of Louth, and Duncan (I think an American variety), all frame well; and the great American, although not yet fully realising all that has been

said of it in size, is decidedly a first-class variety. It bears large, round, highly glazed scarlet fruit, with red flesh, and is luscious and full flavoured, borne on stout footstalks which hold the fruit well off the ground. Dr. Morère, a large variety much grown on the Continent, has also done well this dripping season.—T. LAXTON, *Bedford.*

### TWELVE HARDY FLOWERS OF THE MONTH.

JULY.

THOUGH not yet past their best, herbaceous borders now require constant attention in the way of trimming such plants as have flowered. This is often done in a rough and ready way by cutting them close to the ground; but as this tends to weaken the plants the better method is to trim off the flower stems, leaving any fresh foliage there may be, and withdrawing the stakes at the same time. Seed should also be gathered when ripe, and many plants are more easily propagated by sowing the seed now than by waiting till next spring. The following twelve are good useful flowers:—

*Malva moschata alba* (the Musk-scented Mallow).—This is not commonly included in select lists of hardy herbaceous plants, yet it is very handsome and has a fine musky odour. The pink or rose-coloured form is a not uncommon native plant, and the one under consideration appears to be a garden variety. It grows from 2 to 3 feet in height, the leaves are dark green and much divided. The pure white flowers are a trifle less than 2 inches in diameter, and they are borne in terminal clusters. It is propagated by seed, which ripens freely. Like most of the Malvaceous plants its stems contain a strong but coarse fibre, and many experiments have been made to test its commercial value.

*Silene orientalis* var. *compacta* (the Eastern Silene).—A very ornamental species, bearing umbels 3 or 4 inches across of beautiful rose-coloured flowers. The leaves are opposite and of a light glaucous green, and the plant grows about a foot high. Being scarcely a true perennial, plants, especially in heavy soils, seldom live more than two or three years, but it produces seed very freely. There is a variety with flowers more fringed and lighter in colour.

*Spiraea Aruncus* (the Goat's-beard Spiraea).—For growing singly in open places there are few herbaceous plants which present a more striking appearance than this, the foliage alone making it highly ornamental. In good deep soil it sometimes reaches a height of nearly 6 feet, forming at the same time a massive clump of drooping pinnated leaves. Its flowers are creamy white, small individually, but forming large compound spikes. It forces moderately well in slight heat. A native of Siberia.

*S. palmata*.—Though not new it is only lately that this has become anything like a popular plant. Of less robust habit it never forms such a fine plant as the last, but its broad corymbs of crimson-purple flowers are very beautiful. The leaves, dark green in summer, become in autumn finely tinted with brown and yellow, and the upper part of the flower stems are dark red. Like most of the Spiræas it prefers a slightly shaded, somewhat moist situation and a rich open soil. Introduced from Japan. Propagated by careful division in spring and sometimes by root-cuttings.

*Campanula pyramidalis* (the Pyramidal Bellflower).—July is peculiarly the month of Campanulas, and from the number of fine species now in bloom it is difficult to select one or two and say they are the best. This, however, deserves precedence both on account of its imposing appearance and the long period during which it has been a favourite cultivated flower. It was probably the first exotic Bellflower ever grown in Britain. Gerarde, who published his "Herbal" in the end of the sixteenth century, knew and cultivated it, and it is not unlikely that it was brought by him from Savoy, as he mentions having travelled through several continental countries. It was known by the name of the Chimney or Steeple Bellflower, the first of these names being derived, it is said, from the fact that plants of it grown in pots were placed before unused fireplaces during summer; the last from the stately steeple-like form of its magnificent spikes. As a border plant its flower stems vary in height from 3 to 6 feet according to the nature of the soil, and secondary stems are thrown out from these, forming a handsome pyramidal outline, the whole being covered with a profusion of blue bell-like flowers. The best plants are those raised from seed, but seedlings seldom bloom before the third season. Offshoots are produced somewhat sparingly in many soils, and the plants not unfrequently die off after flowering.

Grown in pots under glass it attains to a greater size in all its parts, and is more symmetrical in shape. There is a white variety, but it is not so suitable for border cultivation. A native of Savoy and Central Europe.

*C. carpatia* (the Carpathian Bellflower).—Owing to its having been used as a bedding plant rather extensively a few years ago, this, in both its forms of blue and white, is well known. It reaches a maximum height of about 15 inches, and is a very profuse bloomer. The flowers are very large and open, and are borne in loose panicles on long footstalks. It is not particular as to soil, but it shows to best advantage on large rock beds. It is not well adapted for bedding, and is not often used as such now. Propagated readily either by division or seed.

*Chelone barbata* (the Bearded Chelone).—By botanists this is now accounted a Pentstemon, but as Chelone it has long been a favourite flower. It bears long lax racemes of bright scarlet flowers with white throats, the lower lip of the corolla being bearded with orange-yellow hairs. The flower stems grow 3 or 4 feet high, and being rather slender require early attention in staking. Very easily propagated by seed or division. Seed sown in early spring under glass will produce plants to flower the same season. A native of Mexico.

*Asphodelus luteus* (the Golden Asphodel).—The Asphodels are a tribe of Lilyworts, though in some classifications they are made the type of a natural order. This species is one of the finest, and probably the one most frequently met with in gardens. It grows from 2 to 4 feet high, with long leafy stems surmounted by dense racemes of bright yellow flowers. It is a native of many of the countries bordering on the Mediterranean Sea, is found plentifully in Palestine, and seems to be the flower referred to by Pope in the lines—

"By the streams that ever flow,  
By the fragrant winds that blow  
O'er the Elysian flowers;  
By those happy souls that dwell  
In yellow meads of Asphodel  
Or amarantine bowers."

There is a double-flowered variety, but it is not more ornamental than the single form. Propagated by division of the thick fleshy roots.

*Erigeron glabellus* (the Smooth-leaved Fleabane).—A showy Aster-like plant, growing 18 inches or 2 feet high. The flowers are light blue with yellow discs, and the leaves are smooth, narrow, and clasp the stems. Propagated by seed and division. A native of North America.

*E. purpureus* (the Purplish Fleabane).—This is a rough-leaved species, with soft reddish-purple flowers. It grows rather taller than the last, and propagates itself freely by seed, seedlings flowering the first season. Also a native of North America.

*Rudbeckia Newmannii* (Newman's Cone-flower).—This gigantic Composite, though somewhat coarse, is a very striking plant in a large border, growing as it does sometimes nearly 6 feet high. The leaves are rough, coarsely pinnate, and the flowers are large, 4 or 5 inches across, bright yellow with black conical discs, hence its name of the Cone-flower. Native of North America.

*Tropaeolum speciosum*.—Though this is a climber and not usually grown among herbaceous plants, it is yet so beautiful that I cannot resist including it here. It has been in this country somewhat over thirty years, and is everywhere held to be one of the best hardy herbaceous climbers we have. When thoroughly established in congenial soil it reaches a height of sometimes nearly 20 feet. Its foliage much resembles that of the well-known greenhouse *T. tricolorum*, but is larger, and the flowers which are produced in thousands are a brilliant vermilion-scarlet. It is everybody's favourite, yet it is not everywhere that it succeeds. The essentials to its successful cultivation seem to be a deep rich soil moist but not wet, a wall with a south-westerly exposure, and perfect freedom from disturbance at the roots. That it thrives better in a humid climate is also attested by the fact that much of it is rarely met with on the east coast of Scotland, while in the west it is magnificent. Anywhere it requires two or three years after planting in which to establish itself before it will flower well. The flowers are succeeded by bright blue berries.—B. D. TAYLOR, *Knockdolian, Colmonell, N.B.*

#### PEACHES AT THE RED ROSE VINERIES.

As these have previously been alluded to in your columns as all being Mr. Rivers' seedlings save Royal George, I regret that I have not drawn Mr. Ferguson's attention more particularly

to them. To very gross growth and no fire heat alone may be attributed the failure of some in setting their fruit; and though I regard Royal George as my testing standard, I ought also to remark that Magdala is my greatest success. Large Early Mignonne I am also much pleased with, and as I am now about to add fire heat I am not the least afraid of succeeding next spring with all the lot. As a good hardy variety for the north of England Early Alfred is worth notice, and Early Ascot has proved itself especially hardy. A few general notes I must reserve for less busy times.—J. WITHESSPOON.

#### CARNATIONS AND PICOTEEES.—No. 7.

(Continued from page 2.)

**CURRENT WORK.**—In early situations the plants will now be fast approaching the flowering period; and if they are in good health the patient florist will soon reap his reward. Those who intend exhibiting ought to have some covering, such as a glass roof or tent, under which the plants may be placed whilst in bloom. If the situation is sheltered it will be well to let the ends and sides of the structure be open so as to cause a thorough circulation of air amongst the plants, which is necessary to prevent them from being drawn and consequently weakened in their young growth. Those who can afford it should have a house in which to flower the plants. This may be a skeleton frame, employing two 6-foot slides for forming a span roof: of course the length will just depend on the amount of slides used for the roof. A building of this width gives sufficient room for a full-sized stand of plants with a path, and three rows of pots down each side; on one side Carnations and on the other Picotees. My reasons for keeping the Carnations and Picotees distinct from each other are two. One is that it appears incongruous to have the blooms of Carnations and Picotees mixed indiscriminately together; and the other is that there is always a risk of Carnations and Picotees being intercrossed, the result of which would be that the seed-saved could produce nothing but mongrels.

Some varieties it is necessary to bloom on a card, otherwise the back petals in a full-grown bloom are liable to be curled; in which case it is nearly impossible to straighten them. Some of the worst are True Briton, S.B.; Marshal Ney, C.B.; Sarah Payne, P. and P.B.; Squire Meynell, P.F.; Premier, P.F.; Illuminator, S.F., and Mary Ann, R.F. It will be found sufficient if the bloom is allowed to hang loosely with the card lying on the top of the back petals. It will greatly add to the enjoyment and pleasure of the grower if the whole of the flowers are carded, the plants being staged with the taller-growing varieties for the back rows, and the dwarf varieties in the front. If each bloom is carded and attached to the rod with a Carnation pin, and set in such a position as to meet the eye of the observer at a right angle when passing down the path, it will in my opinion be a great advantage. A Carnation pin is made of brass wire a little thicker than an ordinary pin; one end is pointed in a similar manner to the pin, the other forms a circle about an inch in diameter, which bears up the card and the bloom. The pointed end of the pins is pressed into the rods with a small pair of pliers, also at the same time giving it the angle suitable to meet the eye when standing in the path.

All early blooms, if good, should be carefully hybridised, as the chances are much more in favour of getting a pod of well-ripened seed from an early bloom. As an example, my earliest flower last year was John Delaforce, H.P.P.: just before it was too late I had a flower of Mrs. Summers opened. With this I hybridised the bloom of John Delaforce. The result was that I had upwards of forty seeds of the largest size, every one of which germinated. In no case had I any other pod so fine as the one mentioned, but then it was fully three weeks before I had any others on which I could operate. It will be well for the new beginner to practise dressing on the early blooms; for although there are some few people who object to it, yet I am so well satisfied with the improvement made in the flowers that I should be sorry indeed to see dressing done away with. In fact to growers in windy situations like mine it would frequently be an impossibility to exhibit non-dressed flowers fit to be seen. Until we raise varieties that do not require dressing, and as long as we grow the majority of flowers at present in cultivation, we shall be compelled to employ the dressing tools.

I will endeavour as near as possible to describe the process of dressing; for although one practical lesson is worth all that can be written, yet still some little information can be gleaned

even from a written description. To commence, we will suppose that you have the dressing tools all ready as before described, the cards also, with the holes enlarged to the size before given, and having a number of soft paper collars made of any kind of paper sufficiently strong to bear up the cardboard collar. These soft collars should be  $1\frac{1}{2}$  to 2 inches in diameter, with a starred hole in the centre, and made so that the points of the star may bear or hold against the bottom of the pod without pressing on the pod so as to bear on the footstalks of the petals. All being ready, the first thing to do is with the steel tweezers to bend back the points of the calyx, splitting tight-podded varieties down somewhat, so as to give more play for laying out the petals; then with the ivory tweezers form the largest or ground petals into a circle, the next row diminishing, but placed alternately with the first row. Afterwards in full varieties another row of petals may be placed, leaving sufficient petals to form a crown, which petals should always be bright and good, as the dresser's art is to bring out or show the best coloured petals when forming the crown of the flower. Full flowers should have a pyramidal appearance, whilst the thin flowers should be round with the petals slightly cupped. Some varieties will dress with a hole down the centre of the flower, as if a number of petals had been extracted. In this case it will be necessary to press down the edge of a petal in the opening, having turned one for that purpose. When the flower has been roughly dressed the card should be fixed and the finishing touches given. In all cases remove all self or run petals, or in Bizarres any which may be short of Flake or Bizarre, as it is a disqualification. In some flowers the stigmas are very strong and stiff and interfere with the dressing of the petals, in which case cut them off; also cut off the anthers of any variety which may carry the anthers in a cluster at the top of the flower. Always use the steel tweezers for extracting petals, and be careful in dressing the flowers not to split the petals.

One or two pests will now begin to be troublesome amongst the plants, such as caterpillars and the Rose borer. The flowers, if the weather is dry, will in some situations be eaten by earwigs, which must be persistently hunted for and destroyed. A friend of mine who is sadly pestered with them has clean pipe heads placed on the tops of his rods, and they form good traps.

Layering may now be commenced, layering only such plants as may be showing colour, so as to be certain that the flowers are in proper colour; those which may come run or self should be marked, so that if layered they can be kept separate from the others. The best compost I find for rooting the plants in when layered is turfy loam with a mixture of sand, if strong, and always a portion of burnt straw or powdered charcoal. To those who may be a distance from where pegs can be procured for pegging down the layers I can recommend a wire peg invented by Mr. Hartley of Leeds. Do not cut off the ends of the foliage, as is sometimes done. I always find the layers root quicker when the foliage is left in its natural state.

**Plants in Beds.**—Look out for vermin of all descriptions, particularly slugs and aphides, which destroy at once. Tie up the flower stems as they advance, and disbud the plants as soon as the buds are large enough; two buds to be left on weak growers, whilst three or four may remain on strong varieties. Give weak doses of liquid manure after the buds are formed, should the weather prove dry.

**Seedlings.**—Any which may have had the soil splashed into the foliage should be cleaned carefully. At the latter end of the month those who may intend growing them in the open may plant them out in the prepared beds, so as to insure their being well established before winter sets in.—G. RUDD.

### CARROTS AND LETTUCES.

THE quickest, largest, and most shapely early Carrot with us is the Early Scarlet Horn; the next best is Early Nantes. These are sown broadcast amongst the Onions, and are cleared off the ground before the Onions require all the space. The latter are making a good growth this season: but unfortunately some of them are decaying, and the grubs of the Onion fly are likewise among them. However, as Onions are not thinned out there will be a sufficient number left for a crop unless the disease and grub prove more than usually destructive. The latter is very prevalent in gardens this season.

I can find no varieties of Lettuce to equal Hicks' Hardy Cos and Neapolitan Cabbage for summer and autumn use. The

former I have in use throughout the year. In winter the plants are sheltered in frames, in early spring they are lifted from the open border and grown on in a late Peach house. This is also one of the best for standing the winter or coming on out of doors. I consider it the best Lettuce grown.—R. P. BROTHERSTON.

### BIRMINGHAM ROSE SHOW.—JULY 24TH AND 25TH.

AFTER the last Exhibition at Aston Park the Birmingham Rose Show which had merged in the Aston undertaking became defunct; but the manes of the departed glories of the Town Hall were not to be appeased, and, phoenix-like, the Show has taken a new and I trust a long lease of existence, and with its old moving spirits (amongst whom Mr. E. W. Badger being himself a host), has re-appeared full of vigour in Bingley Hall, and its renewal all Rose-growers will hail with delight. The Committee, acting upon the votes of those of the Rose community intending to take part in the Exhibition, wisely postponed the Show from the 17th inst. on account of the continued protracting effects of the weather and the proximity of the formidable gathering at Hereford, and full of hopes encouraged by the finer weather of last week and of promise provoked by a very large number of entries, they naturally looked forward to a magnificent display; and bearing in mind the central position of Birmingham as the trying point of north and south, their hopes were not unreasonable. But alas! something like sixty hours' rain between the previous Saturday and Tuesday completely shivered those expectations as well as the aspirations of scores of intending exhibitors. Notwithstanding the hostility of the elements at cutting time, a large and respectable show was, however, got together; and the exhibits from Hereford contributed not a little, it must be confessed, to this result, for without Hereford the Show would have been a floral disappointment. As it was spotted blooms were almost the rule, and the marvel is, in what manner does the magic soil of Herefordshire fortify and render less absorbent the petals, so as to enable the blooms to resist the perpetual moisture of 1879? for Messrs. Cranston's and Mr. Jowitt's flowers were comparatively clean to most others, but even these on some occasions would only have been second. Most of the large southern growers were present with a laudable and unselfish desire of furthering the revival of Birmingham; but it is questionable whether, if they had solely consulted their own interests, their boxes should not have been left at home. The north was hardly represented unless Nottinghamshire be included in that division; but neither Canon Hole's nor Mr. Frettingham's Roses from that county were fully developed, and it is evident that a Rose Show in August might meet with support. Mr. Prince, too, informed me that the Oxford Roses would not be at full for another fortnight.

The Show was held in the skating rink of Bingley Hall, which in very dull weather may have advantages in light and cheerfulness over the Town Hall, which on this occasion was not available; but fortunately Birmingham was for once in a way favoured with fine weather; and on Thursday, when staging was proceeding, it became evident that a material increase of light and temperature was quickly tending to open the eyes and fade the dresses of many floral beauties whose Siren-like education had so unfitted them for the direct rays of Phœbus. But the executive was equal to the occasion, for *forti nihil difficile*; and in a trice, and before some public bodies would have carried on a preliminary discussion, Mr. Badger, with Mr. Vertegans as engineer, had extemporised a parody in whitewash of the all-familiar summer cloud, and almost before staging was completed the whole of the glass in the roof was externally whitened, the threatened danger being averted, and the colour and appearance of the blooms at once materially heightened and improved.

In the class for seventy-two single trusses, open to nurserymen, the competition was principally between Messrs. Cranston, G. Paul & Son, and B. R. Cant; the former being first with plenty of colour, and including good blooms of Le Havre, Marie Rady, Annie Wood, Duchesse de Caylus, Annie Laxton, Avocat Duvivier, Gabriel Tournier, Marie Cointet, Pierre Notting, and Marquise de Castellane. Mr. B. R. Cant of Colchester was second; and Messrs. Paul & Son of the Old Nurseries, Cheshunt, third. The parties occupied also similar positions in the class for forty-eight varieties, three trusses of each; but for the twenty-four varieties, three trusses, Mr. Cant was first. For the local prizes—open to nurserymen, residents of the counties of Warwick, Worcester, and Stafford—Messrs. Perkins & Son of the Park Nurseries, Coventry, showed very creditably indeed, and had they concentrated their strength in some of the open classes they might have been formidable competitors. They were first both for twenty-four and twelve, single trusses, as well as for twelve varieties, three trusses.

In the amateurs' class for thirty-six varieties, single trusses, Mr. Jowitt of the Old Weir, Hereford, was first with fresh and bright flowers, his winning team consisting of Madame Charles Crapelet, Madame H. Jomain, Alfred Colomb, La France, Leopold I., Hippolyte Flandrin, Lord Herbert (good both in this and the succeeding class), Mlle. Eugénie Verdier, Horace Vernet

Etienne Levet, Capitaine Christy, Dupuy-Jamain, Souvenir de la Reine d'Angleterre, Cant's Seedling No. 4 (promising), Baronne de Rothschild, Thomas Mills (very bright and clean), Marquise de Mortemart, Marie Rady, François Michelin, Sultan of Zanzibar, Comtesse de Serenye, Lord Macaulay, Star of Waltham, Marquise de Castellane, Madame Victor Verdier, Mons. E. Y. Teas, Beauty of Waltham, Pitord, Le Havre, Madame Nachury, Louis Van Houtte, Olivier Delhomme, Sir G. Wolseley, Dr. Andry, Duke of Wellington, and Exposition de Brie. In this class the Rev. Canon Hole of Causton Manor, Newark, was second, his stand containing Madame Prosper Langier, Avocat Duvivier, Etienne Levet, Duke of Edinburgh, and Annie Wood in good form. Mr. Jos. Davies of The Square, Wilton, was third. For the twenty-four varieties, single trusses, Mr. Jowitt was again first; J. H. Arkwright, Esq., of Hampton Court, Leominster, was second; and G. P. Hawtrey, Esq., Langley Place, Slough, third. Again for the twelve single trusses was Mr. Jowitt to the fore, Mr. Charles Davies of the Grammar School, Aynhoe, being a very good second, and the Rev. Canon Evans of Solihull third. In the local competitions for the counties of Warwick, Worcester, and Stafford, twenty-four varieties, Canon Evans was first, Mrs. Alston of Elmdon Hall second, and Mr. E. H. Fewkes of Birmingham third. For the twelve varieties Canon Evans was again first, Mr. Julius Sladden of Badsey, Evesham, second; and Mrs. Alston third. In the classes open to residents within four miles of Stephenson Place, Birmingham, the competition was restricted, but some very respectable blooms were staged.

In the open classes Messrs. G. Paul & Son were first for twelve new Roses not in commerce previous to 1876 with May Quennell (not so bright as I have seen it), Robert Marnock (rich velvety maroon), Marie Verdier, Magna Charta, Charles Darwin, Constantine Fretiakoff, A. K. Williams, Marquise de Murinais, Mdle. Gabrielle Luiset, John Bright, Madame Lambert, and Marie Louise Pernet, the most striking of which are noted elsewhere. Mr. Cant was second. For the best new Rose (six trusses) Mr. Cant was first with A. K. Williams, and Messrs. Paul & Son second with Robert Marnock. There was only a limited competition in the classes for Tea, Noisette, and China Roses, Mr. George Prince of Oxford being first for twelve varieties, Mr. Jowitt second, and the Rev. H. W. Watson, Berkswell Rectory, Coventry, third. The classes for twelve yellow, dark, rose-coloured, and white or blush Roses in four varieties, three trusses of each, were fairly contested, but the quality of the blooms, especially the light varieties, which were decidedly ragged, does not call for much comment, and the effect was unsatisfactory. Roses in pots were exhibited only in Class 26 (for thirty varieties) by Messrs. Paul & Son, and to whom the first prize was awarded. For the best bouquet for the stand entirely of Roses and Rose buds Messrs. Perkins were first, Messrs. Cranston second, and Mr. H. Frettingham of Beeston, Notts, third.

Amongst the Roses prominent at Birmingham for their powers of endurance and stability were those of the thick-petalled type represented by Etienne Levet, Marguerite Brassac, Le Havre, A. K. Williams, Horace Vernet, Duke of Edinburgh, Dupuy-Jamain, Sultan of Zanzibar, Dr. Andry, Beauty of Waltham, and Marie Finger. The following Roses also kept a well-marked position all through the Exhibition—viz., Thomas Mills (colour very bright and well maintained), Marie Rady and Mons. E. Y. Teas. Mr. Jowitt also showed excellent, indeed almost perfect, specimens of a Rose *rediviva* in the shape of Lord Herbert, which was some years ago launched by Mr. G. Paul, but almost immediately in a very unparental manner, although no doubt conscientiously, abandoned by him.

Of the newer varieties Constantine Fretiakoff, somewhat in the way of Comtesse d'Oxford, but brighter and fuller, and not so confused as Gabriel Tournier, was shown well by Mr. Frettingham. Marguerite Brassac, sometimes undistinguishable from Charles Lefebvre, was admirably shown, and Mr. Jowitt's specimen which was as near perfection as possible deservedly obtained for him the prize for the premier Rose in the Exhibition; it seems to me to be a fusion of Charles Lefebvre, Horace Vernet, and Fisher Holmes. A. K. Williams is another good dark Rose of substance, and if in size it carries all that is required it will have few equals. Jean Souper is probably the best modern dark Rose, but perhaps the Sultan of Zanzibar would not admit it; both are very good. Avocat Duvivier was well shown in several stands, and in new Teas Madame Nabonnaud of a distinct flesh tint, approaching in colour La France, Anna Olivier, and Comtesse Riza du Parc were also good. Comtesse Nadaillac and Marie Van Houtte were the best represented of the older varieties, Maréchal Niel being almost conspicuous for his absence.

Decorative plants, which considerably enhanced the display, were contributed by Mr. R. H. Vertegans of Chad Valley Nurseries, Mr. Hewitt of Solihull, and Mr. Vice-President Tarks; and in the competition in Class 27 Mrs. Alston of Elmdon Hall was first with very fine specimens of stove and greenhouse plants, and Mr. C. E. Matthews of Edgbaston second. Messrs. W. Paul and Son of the Nurseries, Waltham Cross, sent six boxes of Roses not for competition, including some fine blooms of Duchess of Bedford (an improved Général Jacqueminot and of very fine form),

May Quennell, Countess of Rosebery, and some promising unnamed seedlings. Mr. G. Davison of White Cross Nurseries, Hereford, also contributed some good blooms not for competition, and a stand of seedling Roses was exhibited by Mr. Arkwright. Messrs. Hewitt showed a stand of cut Delphiniums, consisting of seedlings and named sorts, amongst them some striking varieties. Mr. Edward Holmes of Withington Nurseries, Lichfield, had large baskets of *Nertera depressa* profusely berried, and (if edible) suggestive of jam for the Kentish fruit-growers. Mr. Holmes also showed a distinct and striking new Conifer—*Juniperus virginiana alba spica*—stated to be hardy.

Fine weather also characterised the second day of the Show, and it is hoped that the unpropitious season will not bring such unsatisfactory results as to prevent a repetition of this pleasant gathering in 1880.—T. LAXTON, Bedford.

## ORCHID CULTURE.

LATELY we were much struck, while inspecting several gardens where Orchids are particularly well grown, to find that at no two gardens or nurseries were these grown under exactly the same conditions. The underlying secret in the successful culture was the intelligent care evidently bestowed on the plants; for not only were the structures as different as could be in some instances, but the material employed and the mode of potting were very varied. This was particularly noticeable in the case of deciduous *Calanthes*. These were grown in flat pans suspended near the roof, in small pots, and in pots of a larger size. The soil also varied from a base of loam to one consisting of peat; some were in unmanured composts, others in composts rich in manure, yet where the care bestowed was evidently great the difference in the growth in the several instances was scarcely noticeable.

*Odontoglossums* furnish another case in point. They were found in robust health, flowering freely, and producing strong and many-flowered spikes potted in a compost mainly of sphagnum, in sphagnum and peat in equal proportions, in sphagnum one part to two parts of peat, and in a compost almost entirely peat. Potsherds and charcoal were present in the whole of these. Some growers were using pots in comparison with others small for the size of the plants, others again large. Some had the plants raised high above the pot standing upon a round cone of compost, others had the bulbs just above the rim of the pots, yet the results were equally good. The finest growths of *Dendrobium Devonianum* were produced from plants which in the one case had not been removed from their baskets for seven years, in the other the plants were shifted every season. And so we might go on enumerating instances to prove that success in the culture of Orchids depends very greatly on the amount of care lavished on them.—R. P.

## THE OLD YELLOW ROSE.

In your issue of the 3rd July you answered some inquiries relating to the Old Yellow Rose, and gave a quotation from Parkinson's "Paradise" describing it. Perhaps in the interests of your subscribers of antiquarian turn you will permit me to quote a passage from a letter of Sir H. Wotton, in which a still earlier reference is made to a double yellow Rose, which I take to be the old Rose in question. Sir H. Wotton, whose name will be familiar to most of your readers through the pen of Izaak Walton, was in 1622-23 our Ambassador at the Court of Venice. His letter of this date is addressed thence to the Earl of Holderness (vide "Reliquiæ Wottonianæ," fourth edition, 1685, pp. 317, 318). After reporting to the Earl that he had sent to His Majesty King James I. some of the best Melon seeds of all kinds, "with very particular instruction in the culture of that plant," he proceeds—"By the present bearer I do direct unto your lordship through the hands either of my nephew or Mr. Nicholas Pey (as either of them shall be readiest at London), for some beginning in this kind of service, the stem of a double yellow Rose of no ordinary nature, for it flowereth every month (unless change of the climate do change the property) from May till almost Christmas. There hath been such care in the manner of the conveyance, as if at the receiving it be presently put into the earth, I hope it will prosper."

Parkinson says the yellow Rose was first brought into England from Constantinople; and in view of the intercourse between Venice and Constantinople at this period it is only natural to suppose that the florists of Venice alluded to in this letter obtained their supply from the same source.

Whilst referring to the early history of the Rose in England

it may interest some of your readers to note the following specific allusions to its cultivation. A.D. 1521, See Nicolas's "Privy Purse of Elizabeth of York." 8vo., 1830, page 216. A.D. 1558, See "Le Livre des Singularités," par. 9, Philomeste, Dijon, 8vo., 1841, page 253, where the following passage occurs—"The Rose was imported from the Isle of Zante, 28th June, 1552." A.D. 1580-1585, See Tusser's "Five Hundred Points of Good Husbandry," Edit. Mavor, 1812, pp. 21, 88, 121, which establishes the point that Roses were common in England at this period.—FREDERICK HALL.

### FORCING VINES IN DULL WEATHER.

I DO not like, as a rule, to differ from your correspondent Wm. Taylor, but there can be no greater mistake than to teach the necessity of high temperature for Grapes in sunless and dull weather. I have Muscat Hamburgs beautifully set and colouring finely now, though there has been no fire heat whatever in the houses from the 1st of May till the 19th of July, when for three days on account of excessive cold and moisture fire heat was put on for the first time since April 28th. My average night temperature has rarely exceeded 50°, and in the same house I have both Ferns and stove plants as *Dracenas*, *Coleuses*, *Allamandas*, *Stephanotis*, *Crotons*, &c. I only allow the Vines to occupy in this house the east side of a double span house. The border is inside, but with arches through which the roots of the Vines can pass into an outside prepared border made of turf, broken bones, and good farmyard manure. The soil is light. The Vines, only four in number, were first grown in pots and fruited in pots in 1877, planted that autumn, and now in 1879 have each of them two or three canes which take the full length of the rafters—18 feet. The sorts are Muscat of Alexandria, Muscat Hamburg, Dr. Hogg, and the ordinary Black Hamburg. The Vines are regularly syringed, especially when in bloom, and I never find the least difficulty as to setting. The last and more backward crop of the four is oddly enough the Black Hamburg, but I think almost entirely because it was over-fruited when a pot plant. The bunches of Muscat Hamburg are particularly fine and are colouring beautifully and evenly; I may say the same of Dr. Hogg. There are fourteen bunches of Muscat Hamburgs, and those at the upper part of the house where the heat rises are at least a fortnight in advance of those of the lower. I find no difficulty in the setting of the Muscat of Alexandria, though, as I wished to get three strong canes I have not left many bunches, but for an experiment I am allowing a bunch at the top of the house from wood of this year's growth to bear fruit to see whether it will ripen this winter.

The house is a double span, but it also has a hip to the south and the glass to the north, and the back wall to the north is only 6 feet 6 inches high. The glass is all large—i.e., either 20 by 16 inches or 24 by 20 inches, set the wide way of 20 inches. My object being to gain every ray of light, I never shade, only occasionally put on whitewash with paste and milk if the weather should be too scorching, but such has not been our fate this year. Every plant in the house stands level with the glass on wood stages made of strips of 1-inch deal 3 inches wide. All the hot-water pipes for winter use are under these stages, but none touch the ground.

Mr. Taylor protests against extreme pruning; I only know that with me, if I did not keep the pruning scissors constantly going to admit light and air, especially in wet sunless weather, I should not get a quarter of the crop of fruit which I have at present, which, as I ventured to state in your last issue, is in some cases extraordinary. Luckily after a pouring wet day on Sunday the 20th, when 0.75 inch of rain fell, followed by a cold drizzly wet day on the 21st and a blustery but drying-up day on Tuesday 22nd, we have had (and I am writing this Friday evening the 25th) three very fine days with bright sun after eleven, and followed by cold clear nights.

In all my experience of Strawberries I have never seen so great a promise of fruit. We only began to pick on the 23rd, but if only by any fortunate chance the present weather continues we shall be picking by the hundredweight. The greatest crops in point of numbers are Garibaldi, Newtown Seedling, President, Lucas, Sir J. Paxton and Traveller; but out of twenty-five sorts I cannot record a single failure, and many Strawberries of James Veitch and President, though not perfectly ripe or fully grown, weighed from 1½ oz. to 1½ oz., in three dishes picked on the 24th. The beds are never forked, the soil is light loam, but the plants are mulched in winter with good farmyard manure and planted 2 feet apart, three plants being put

into each clump in a triangular form 6 inches apart. Some of these only planted last September have good crops now, whilst those planted in the autumn of 1877 are in extraordinary bearing. The plants are kept free of runners all the autumn, and all the runners are removed after the blossoms are set. Straw chopped through an ordinary chaff cutter is strewn all over the beds and into the crowns of the plants, and when the fruit is well ripening herring nets are thrown over all the plants to protect them from birds.

Since writing the above I weighed two Strawberries picked on the 26th of James Veitch; one was 2 ozs., the other 1½ oz., and a President also 1½ oz.—C. P. PEACH.

### DIANTHUS HEDDEWIGII DIADEMATUS AS A FLORISTS' FLOWER.

I HAVE some fine specimens of the double *Dianthus* blooming at present, with flowers of good form and substance, and making a brilliant show. Beside them are beds of double red and striped Carnations, *Antirrhinums*, and Pansies; and looking at and comparing their relative beauties induces me to ask, Why is not the double *Dianthus* also included in the usual lists of florists' flowers, or why is it not more extensively cultivated? A comparison of either of those named which are so included would be altogether in favour of the *Dianthus*. In colour, beauty, and usefulness it is superior. Why is it not included in the schedules for which prizes are given? If it was we should have still finer varieties than those brilliant single gems *Crimson Belle*, *Eastern Queen*, or the still finer *Laciniatus splendens*, which some short time since were deservedly such objects of praise and admiration. The question here arises, What are the characteristics of a florists' flower when considering its claims to rank as such? I take them to be—1, that beauty, shape, and form must make them desirable; 2, to be easily capable of perpetuation and propagation; 3, the capacity of producing new varieties; and 4, to be in such demand and to be so suitable for garden or conservatory decoration as to be objects of value to growers and the trade.

Permit me to urge the claims of the *Dianthus* under each of these heads in a few brief observations. I have principally in view the double variety, but the brilliant single ones already named should be in every collection—indeed some prefer them, while they have the additional recommendation there is a certainty of their coming true from seed. 1, I have already referred to their beauty in contrast with other florists' flowers, and have yet to learn any hardy outdoor flower, perhaps excepting flamed and feathered Tulips, with colours more brilliant; and that they are desirable for bedding or lines any one who has seen their rich glow does not require to be convinced. As, however, the heads of bloom are heavier than Carnations, and the stalks not so well able to bear their weight, it is in every case necessary they should be carefully staked and tied to be effective. The pleasure, gratification—in fact the success or failure, especially in such weather as this, often depends upon such a comparatively small matter as neat staking and tying. It would be utterly impossible to admire the finest flower coated over with clay thrown up by a heavy shower, which showers unfortunately are now the rule, not the exception as in former summers. This remark applies, I find, very generally to bedders that never needed such attention before.

2, Propagation. This can be effected by seed and layers; and though I have not tried, I have no doubt also by cuttings and pipings. If you want to perpetuate a good strain as you would any other florists' flower, top-dress or give liquid manure during the flowering stage, and side shoots in abundance will be formed. These can be shifted off and planted. If some sandy soil has been put carefully around them they will probably be rooted into it. I have a 4-foot window box gay with their brilliant blooms at present, and with plenty of young side shoots fit for planting, and without further attention than some liquid manure at intervals, which added much also to the size of the blooms. It must always be remembered that, like all the other *Dianthus* family, if you do not have those shoots the first or second year you may the third—I have kept no plants longer—so that a very good variety need not be lost. From the perfect doubles you obtain no seed; so that this system of propagation becomes most convenient. The semi-doubles produce seed which, if a good strain, should be preserved; but care must be taken, as the pods open in an hour's hot sun.

3, This brings me to the third recommendation of these plants, the power of producing new varieties; as it is only



from seed those can be had. Then I would say, While you should preserve a good strain when you get it, sow a mixed packet occasionally from a respectable firm, with the hope of getting something new. The greater the number of your varieties the better the chance of a really good hybrid.

4. To be in commercial demand. Whatever the demand has been hitherto, I am persuaded if a fraction of the readers of the Journal gave this *Dianthus* a trial, and were as well pleased with it as I am sure they would be, the culture would be as extended as its great merits deserve, while I hope I have shown it to be in no way deficient in the characteristics of a florist's flower.—W. J. M., *Clonmel*.

### FRUIT PROSPECTS.

JUDGING from the reports of the fruit crops in the Journal, "failures," we are sorry to notice, is the general cry. The loss of the Apple prospect is the most serious; but we sincerely hope for more favourable reports from some of our southern growers. We have had as yet no summer—no sunshine to help us in our difficulties. We had here on June 26th a very heavy hail-storm which lasted two hours. Our Lettuces, Beans, Celery, &c., are terribly cut, and the bedding plants and fruit trees were left almost leafless.

Of the fruit crop happily I can give a more favourable report than many of your correspondents. The Pear trees are carrying an average crop. The following varieties are carrying heavy crops:—Jargonelle, Beurré Hardy, Brown Beurré, Louise Bonne of Jersey, Seckle, Dunmore, Gansel's Bergamot, Winter Nelis, Joséphine de Malines. I might add that the above-named varieties are all grown as espaliers. Of Apples I cannot give a good account, as the pyramids are a complete failure, excepting Lord Suffield, Golden Pippin, and Cox's Orange Pippin; these are looking well. The standard trees are carrying half a crop. Plums are abundant—Victoria, Green Gage, and Coe's Golden Drop are very heavy crops. Peaches and Nectarines we do not grow outdoors. Our Apricots are a failure, although they bloomed well. Bush fruit such as Currants and Gooseberries are plentiful, also Raspberries and Strawberries; but late Black Prince Strawberry is only now changing colour. Cherries are plentiful on standard and other trees; but if this wet and cold weather continues long we may still expect great disappointments. We observe after the past severe winter that slugs are more troublesome than ever, as well as aphides and caterpillars. In most of the gardens round this neighbourhood the Gooseberry trees are leafless owing to those destructive caterpillars. We found that soot dusted over the trees dislodges the pest, but I do not recommend it to be used, as it disfigures the fruit; but a cleaner and more effective remedy is quicklime and dry sand in equal parts mixed together and dusted over the bushes. The caterpillars will fall the moment the mixture touches them.—JOHN LLOYD JONES, *The Mount, Congleton, Cheshire*.

### NOTES AND GLEANINGS.

WE have received from the Royal Horticultural Society a list of the FELLOWS elected from January to June of the present year. The number in January was eighteen; in February twenty-five; in March twenty-one; in April twenty-four; in May fifteen, and in June twenty-three. Total 126.

—AMIDST the general outcry of damaged fruit and other crops, the result of this unusually wet season, it is pleasant to find something that appears to be an exception to the general rule of failure. This exception is certainly afforded by ORNAMENTAL TREES, particularly the Conifers and their allies, for rarely are they seen to better advantage than at present. Here in the customary scorching July with the consequent attendant sere and exhausted foliage, we still see the Elm, Oak, Lime, Ash, and innumerable other trees bright with fresh green foliage that in some instances rival the vernal tints. Uncommonly fine are the Golden Yews and Arbor-Vitæ this season, the colour deep and good, and the growth free. The beautiful *Retinosporas* are also in excellent condition, and even in some situations where they usually succeed but indifferently they appear as well as could be desired.

—ON the ROCKERY IN THE ROYAL HORTICULTURAL SOCIETY'S GARDEN at Chiswick several interesting little plants are flowering, which are well adapted for similar positions in gardens generally. Of these the dwarf *Campanulas* are especially noticeable, particularly such as *C. garganica*, *C. car-*

*patica alba*, *C. turbinata*, *C. muralis*, and *C. fragilis*. A pretty plant for a shady nook is *Orchis foliosa*, with its large dark green glossy leaves and tall spikes of pale purple flowers; and equally good for clothing a bare and conspicuous corner of the rockery is the attractive *Thymus rotundifolius*, of which the small reddish purple flowers are so numerous as to form a charming little floral carpet. *Stenactis speciosa* is a beautiful member of the order Compositæ. It grows from 1 foot to 18 inches high, and bears a great abundance of flowers during the summer months. The outer ligulate florets are of a pleasing and distinct lavender blue tint, the centre florets being yellow. This is a Californian species, and first appeared in this country about 1831.

—“AT Messrs. Veitch's Nurseries, Chelsea,” writes a visitor, “is a houseful of the finest varieties of TUBEROUS BEGONIAS, which are now very gay. Some salmon-coloured seedlings are very effective. Brilliant, Le Géant, and Monarch are the finest of the named varieties. A number of *Abutilons* are also in bloom. *Boule d'Or* will prove a capital companion to *Boule de Neige*, from which it is distinguished merely in the colour of the flower. These, with *A. Darwinii tessellatum*, are the three best varieties up to the present time.”

—DR. DENNY regrets that an unavoidable circumstance prevented arrangements being made for the members of the PELARGONIUM SOCIETY dining together at Swanley on the 30th inst. as we announced by his request in last week's issue of the Journal. We are also requested to state that the intimation which has been circulated that “the members of the Floral and Fruit Committees of the Royal Horticultural Society will dine together at the Lullingstone Castle Hotel, Swanley, on Friday, August 1st, and would be pleased to find that some of their horticultural friends would join them,” is made without any authority whatever, no such arrangement having been sanctioned by either of the Committees, or by any act of the Council of the Royal Horticultural Society.

—No plants in Battersea Park have been more attractive during the past three weeks than *FUNKIAS*. The finest of them is *F. subcordata*. A marginal row of this species near the charming tropical nook is splendid, and equally attractive also are plants dotted here and there on the sides of grassy mounds. Some of the plants are 3 feet in diameter and have about thirty flower spikes, each bearing about as many flowers. The cool wet summer has evidently suited these plants, which we have never seen so fine before.

—IN the large VINERY at Chiswick there is a fine crop of Grapes now swelling rapidly, and the general condition of the Vines is all that could be desired considering the disadvantageous season we have experienced. The growth is vigorous and firm, the foliage healthy and clean, and the bunches although not large are of a very useful size, and the berries appear to be swelling evenly. The laterals were also free from the defect we have noticed in so many instances—viz., the loss or non-production of leaves from their base, for here the foliage is good down to the spur, and the lower buds are plump and promising.

—If a period of bright sunny weather should now set in, of which we have had a few uncertain signs, SHADING will become necessary for Cucumbers, Melons, Vines, &c., owing to the tender and succulent condition of the foliage. Without this precaution scorching and irremediable flagging will prove disastrous to the foliage. Another point also deserving attention is the mulching of borders generally, for the roots of Vines and plants are very near the surface, and drought would now be exceptionally injurious to them.

—OUR correspondent “J. R. S. C.” writes as follows:—“In regard to the correction in the article on ‘COWPER AS A GARDENER,’ I wish to state that I fully believe I wrote ‘Weston,’ as I am well acquainted with the poet's history; it was probably a misapprehension on the compositor's part.”—[It was.]

—IN consequence of the inclemency of the weather the DEVIZES HORTICULTURAL SOCIETY'S SHOW is postponed until Tuesday and Wednesday, August 5th and 6th.

—WE have received a PLAN OF THE KING'S ACRE NURSERIES, HEREFORD, which are to be let on lease. These nurseries, established in 1785, and carried on for the last thirty years by the present proprietor, Mr. Cranston and co-partners (who are retiring from business), are famed for Rose culture. They possess the advantages of a favourable climate and a rich soil, and are in excellent condition. The grounds are situated

within two and a half miles of the city of Hereford. The quantity of land now under cultivation in these nurseries for Roses exceeds 30 acres, and there are ten propagating and other hothouses devoted entirely to their culture. Thirty acres are devoted to fruit trees and Conifers, and forest trees and evergreens are largely grown. A seed farm has recently been added, which adjoins the nurseries, and consists of about 43 acres of first-class land. The glass houses are all well and substantially built, and are in excellent preservation, many of them having been only recently erected, and the buildings and offices are admirably arranged. The extent of the nurseries and lands is as follows:—The King's Acre Nurseries, house, buildings, cottages, and land, 67 acres, 3 roods, 16 perches; offices, stables, and nursery, 2 roods. Crab-Tree Field Nursery, 5 acres, 3 roods. Baskerville Cottages, gardens, meadow, and Cross and Hand Nursery, 4 acres, 1 rood, 35 perches. Seed farm and buildings, 43 acres, 2 roods, 35 perches. Seed Warehouse and Premises, Broad Street, Hereford.

— THE Committee of the Bulb and Seed Merchants' Society at Haarlem has been commissioned by the General Meeting of July 21st, 1879, to give notice that the EXPORTATION OF BULBS will this year take place later than usual. The unfavourable season and the rainy weather have caused great delay in the labour and the drying of the bulbs: it is therefore in the purchasers' interest to allow to the suppliers the necessary time for the delivery of the bulbs in a dry condition.

— MR. JOHN BARRY, late gardener to Josa De Canto, Esq., St. Michael's, Azores, has succeeded Mr. Shaw as gardener at Kirklington Hall, Carlisle.

— AN instance was recently recorded of FRUIT TREES on a south wall having been INJURED either by the severity of the winter or the inclemency of the spring, while other trees on east and west aspects were comparatively healthy. A striking example of the nature indicated came under our notice the other day at Garbrand Hall, Ewell, the residence of Mrs. Torr. A great length of the boundary wall of the garden faces the south: the wall then turns rather suddenly, and the aspect is a south-easterly one. On this, the south-east aspect, the Peach and Noctarine trees are as clean and healthy as can be desired; but on the south aspect the whole of the trees are not injured merely, but actually dead. It is a deplorable and complete wreck, which Mr. Child, who is a sound and intelligent gardener, finds a difficulty in accounting for. The wall will now be covered with other trees than Peaches: it is very suitable for diagonal cordon Pears, which would have a pleasing effect, and would then produce superior fruits. A note on some of the attractive features of the garden must be deferred.

— IN Mr. W. Bull's nursery at Chelsea the very handsome LILIUM AURATUM CRUENTUM is now flowering. This is a distinct and beautiful variety of *L. auratum*, and is one of Mr. Bull's recent importations. The flowers have the form of the species, but are remarkably distinct in colour: down the centre of each division of the perianth is a stripe of deep crimson, and numerous spots of a darker hue, the body colour and margin being white. This is a valuable acquisition.

— A CORRESPONDENT informs us that the first Rose Show of the SHROPSHIRE HORTICULTURAL SOCIETY was held in Shrewsbury on the 23rd inst., and proved "not only a good exhibition but a financial success."

— THE present season suits the beautiful ESCHSCHOLTZIA MANDARIN admirably, and if the plant flowered as freely and brilliantly every season as it is now doing at Chiswick too much could scarcely be said in its favour. Very bright and hot weather is evidently adverse to the well-being of this plant, which by-the-by we may remark is a variety of *E. crocea* that was sent out by Messrs. Carter & Co. in 1877, and it was certificated at one of the meetings of the Royal Horticultural Society. It is well adapted for grouping in masses, as the extreme rich orange colour of the expanded flowers is then very effective. The flowers in a young state are also showy, for the under side of the petals and the buds are of a fine scarlet hue.

— ACID REACTION OF FLOWERS.—It was stated, as the result of observation, by MM. Frey and Clézet, that the juices of all red and rose-red flowers showed an acid reaction, whereas the juices of blue flowers were always neutral, or even weakly alkaline. The subject has been studied afresh by Herr Vogel, who examined one hundred species—viz., thirty-nine blue, forty-four red, six violet, eight yellow, and three white flowers. The experiments (described to the Munich Academy) confirm the view that it is not warrantable to attribute the red colour-

ing of flowers to action of acids or acid salts on blue colouring matter, or to attribute the latter to the influence of alkalis on red colouring matter, though doubtless there is a certain relationship between certain red and blue plant colours. It further appears that the opinion that plant juices generally, and even the majority of flower juices, have an acid reaction is pretty correct; among one hundred flowers there were only twelve which did not react acidly. On the other hand, the rule above referred to is not found to apply universally, for among thirty-eight blue flowers twenty-eight showed a decidedly acid reaction, though the degree of the acidity was less than in red flowers.—(Nature.)

— A CORRESPONDENT writes—THE BOWLING GREEN that I am connected with has given the members an immense amount of trouble this season owing to the enormous quantity of worms that have made their appearance; and although large quantities are being extracted they still continue to increase, and at times have rendered the green quite unfit for bowling. I should be glad if some of your readers could suggest some means by which the worm nuisance could be exterminated from our green.

— A BEAUTIFUL bulbous plant for the border is TRITELEIA MURRAYANA, and it forms an excellent companion for *T. longipes*. The height of the plant is about a foot, and the pale purple or lilac flowers are borne in large umbels, which are produced very freely, and are very durable. A rich light soil seems to suit the plant admirably.

— THE double white variety of LYCHNIS DIOICA is very useful both as a border plant and for yielding a supply of neat blooms for cutting. The plant also succeeds well in a pot, and we recently saw an instance of its adaptability to this purpose in Mr. John Riches' nursery, Lower Tooting.

## CHOICE GARDEN ORCHIDS.—No. 6.

### CATTLEYA.

ETYM.—Named by Dr. Lindley after William Cattley, Esq., of Barnet, a great encourager of botany, a celebrated orchidologist, and his personal friend.

A large genus of Orchids, which are special favourites with the cultivators of this order, both on account of their large flowers and also from the exquisite colours they display. They are pseudobulbous epiphytes, bearing one, two, and sometimes three coriaceous leaves. The flowers are borne upon terminal racemes, which are produced from the axils of the leaf or leaves. Sepals and petals fleshy, spreading, the latter mostly largest; labellum or lip cucullate, enclosing the column, three-lobed; column clavate, semiterete, articulated with the lip. The genus differs from *Lælia* in having four fleshy pollen masses instead of eight.

CULTURE.—The smaller-growing species thrive admirably on blocks of wood suspended from the roof, but the larger ones become starved when treated in this manner, and should therefore be grown in pots. For this purpose use good fibrous peat which has been well cleared of all the fine gritty soil, adding a small portion of living sphagnum moss and a little sharp silver sand; drain the pots thoroughly, and in potting set the plants upon the top of the soil, which should be elevated into a little cone above the rim of the pot in order that the water may rapidly pass away. Cattleyas do not require a very high temperature. The majority of the species may be successfully grown under the shade of Vines in a cool grapery. During the growing season they enjoy a liberal supply of water at their roots, and a genial moisture should be maintained in the atmosphere. By all means, however, avoid the too prevalent error of producing this by syringing, for these plants do not like syringing; or rather the artificial system of cultivation which we adopt by placing them in pots allows the water from the syringe to lie in the large imbricating sheaths which envelope the young growths, and always injures them partially, whilst in many instances it causes their total destruction. The smaller species and varieties growing upon blocks are not subject to this fatality; their pseudobulbs not being erect, the water runs away quickly, as it would were they growing upon branches of trees in their native habitats. The pseudobulbs being matured, water must be partially withheld, and less moisture kept in the atmosphere in order to give the plants a season of rest. We do not advocate the withholding of water entirely, as excessive drought causes the pseudobulbs and leaves to shrivel; this throws the plant into bad health, and we usually find them very difficult to resuscitate. At the same time a

moderate drying will prevent the latent buds from starting into growth, and enable the plants to bloom more freely; for buds which start prematurely into growth not only finish very weakly but rob the pseudobulbs from which they spring of the power to produce the flowers which they should in due season.

In the matter of cleaning and the destruction of insect pests we can recommend nothing better than we have already done when treating upon *Aërides* at the commencement of these articles. Some assert that no insect pests will appear if the temperature and atmosphere are kept in a congenial state, but in spite of this we are bound to acknowledge after thirty years'



Fig. 9.—*CATTELEYA ACKLANDIÆ*.

experience amongst Orchids that they will come, and we never yet saw a collection absolutely free from them. Cattleyas are mostly natives of Brazil, New Grenada, and Central America, the whole genus being entirely confined to the western hemisphere. Temperature.—Summer, 70° to 80° by day, 65° to 70° by night; winter, 65° to 70° by day, about 60° night.

*C. Acklandiæ*, Lindl. (fig. 9). Bot. Mag., t. 5039).—Pseudobulbs slender, furrowed, somewhat oblique at the apex and

about 6 inches in length, bearing two ovate, submarginate, coriaceous, small dark green leaves. Flowers in pairs, large, varying considerably in the intensity of their markings in different plants; sepals and petals (normally) rich chocolate brown, transversely barred with streaks of yellow; lip large, three-lobed, the middle lobe largest, fiddle-shaped and spreading; colour deep rich purplish rose, the side lobes are rotund, small, and unable to enclose the column. It blooms during the

months of May, June, and July, sometimes flowering twice in the year. Native of forests in the neighbourhood of Bahia. 1839.

*C. bicolor*, Lindl. (fig. 10). (Bot. Mag., t. 4909).—Pseudobulbs stem-like, very slender, deeply furrowed, and upwards of a foot in height. Leaves in pairs, spreading, oblong lanceolate, obtuse, coriaceous, carinate, deep green on the upper side, paler below, Scape terminal, erect, sheathing at the base, five to ten-flowered.

Flowers 3 to 4 inches or more in diameter; sepals oblong lanceolate, somewhat falcate, acute; petals a little larger, broadly spatulate, the whole being of a uniform coppery-green colour; lip oblong-cuneate, slightly reflexed, the apex broad and bilobed; colour deep rosy purple or magenta, with a white margin; side lobes absent, leaving the large column quite exposed. It blooms during the summer months, lasting long in perfection. Native of Brazil. 1838.



Fig. 10.—CATTLEYA BICOLOR.

*C. Schilleriana*, Rehb. fil.—This beautiful species and its variety *Regnellii* are dwarf plants, resembling somewhat a robust-growing form of *C. Acklandiae*; but, though at first sight bearing some affinity with the last-named species, the large side lobes which envelope the column and which in *C. Acklandiae* are so small that this organ is left quite exposed, will at once form a distinguishing character. Pseudobulbs clavate, 3 to 6 inches long, deeply furrowed, supporting from one to three leaves; two, however, is the most usual number, these are oblong-obtusae, slightly bi-lobed at the apex, coriaceous in texture, and dark green. Scape short, erect, two to four-flowered, measur-

ing 3 to 4 inches in diameter. Sepals oblong-ligulate, with many margins, dark green outside, the front being of a dark coppery hue with green margin, and irregularly spotted with dull purple; petals marked in the same manner, but narrower; lip large, three-lobed; side lobes white tinged with rose, cucullate, spreading outwards at the points, where they are richly marked with bright crimson; middle lobe broad and flat, very narrow at the base, where it is yellow, front portion bright crimson, reticulate with lines of a deeper hue, margin white, prettily and finely toothed; colour white tinged with crimson at the apex, and pressing close on the base of the

middle lobe of the lip. It should be grown upon a block of wood. Blooms during the summer months. Native of Brazil. 1859.

*C. Schilleriana*, var. *Regnellii*, Rehb. fil. (Warn. Select Orchid, t. 22). Syn., *Catleya Regnellii*, Hort.; *C. Schilleriana purpurea*, Hort.—In general habit there is very little indeed to distinguish this from the species. The flowers, however, vary considerably, and it has also the peculiarity of flowering twice in the year. Sepals and petals somewhat oblong, becoming spatulate towards the apex; ground colour deep olive green, transversely marked with large oblong spots of rosy purple; lip three-lobed; side lobes cucullate, spreading outwards, white tinged with purple, inside deep amethyst; middle lobe narrow at the base, where it is yellow, marked with five parallel lines; front portion deep amethyst, with white margin and dentate edge; column pressed close upon the lip, rosy purple at the apex. It blooms in July, and again in October. Brazil. 1859.

#### SYRINGING VINES—RED SPIDER.

It appears from the remarks of "SINGLE-HANDED," on page 43, that he is afraid that if syringing is dispensed with good Grapes with a heavy coat of bloom will cease to exist. I think not. I had the pleasure of seeing some vineries a short time ago where the syringe is never used after the Grapes are set, and red spider is unknown. As to using the syringe after the fruit is coloured without destroying the bloom, the merest tyro in Grape-growing will at once see the impossibility of the feat, no matter what amount of "dodging" is resorted to.

Whatever may have been "SINGLE-HANDED'S" experience of the application of sulphur to the hot-water pipes or flues, it can be readily proved that it is impossible for red spider or any other insect to live in its presence. That he succeeds with his treatment I shall not deny, but to attempt to upset a practice which has received the support of most Grape-growers in Great Britain is a step in the wrong direction.—PETER FERGUSON.

DID "SINGLE-HANDED" use sulphur before or after the appearance of spider? If he is in this district and will visit my place I will undertake to convince him that syringing Vines is bad practice, and that the timely use of sulphur is good practice. From Mr. William Thomson's treatise on the Vine I received my instructions, and it is only fair for me to state that I attribute much of my success to what I read there. I have mildew all around me, but with well-drained borders and fire heat I have not the slightest dread of it visiting me.—J. WITHERSPOON.

#### ANTS, SPIDERS, AND ROSES.

ON Rose trees, though the foliage is now fine (clean and large), insects have been abundant as well on the dwarfs as on the standards; also caterpillars (common green), and the one which so resembles the stem of the Rose, besides the usual grubs and maggots. Ants are decided enemies of Roses. Some years ago they attacked several of my trees, specially persecuting a La France. It was long before we could free the tree, even by repeated syringings of quassia water. It was a standard tree. We tied nauseous things round the stem. Finally La France recovered, and lives to endorse all that was said by the raiser some weeks since in the Journal of her unique delicate beauty and incomparable character for fragrance and constancy. No Rose is more admirable in habit of growth than La France, and none I think is so free-flowering. Like her relations the Tea tribe, she too attains her highest perfection and fullest size in the autumn. To return to the ants. This year the ants attacked Boule de Neige, eating the buds completely out before they were discovered in them. Spiders I still believe, and a very experienced gardener of great opportunities of observation confirms my opinion, are injurious to Roses, specially, he says, to wall Roses; but I find them on standard trees also, where they will glue up the finest leaves with their tenacious threads. A very vivid green spider does this. The wall spiders are generally brown or black.

Amongst wall Roses Gloire de Dijon has been and is still superb. The wet and sunless atmosphere must have suited it here, the blooms being very large, round, and perfect, the texture of the petals rich and firm, and the whole flower worthy of Canon Hole's eulogium on the Rose he would choose, could he choose but one.

Maréchal Niel, sadly shattered by the terrible winter, and depressed by the continued ungenial weather, has hardly rallied. The blooms are not nearly so abundant nor so well perfected as usual. Climbing Devonensis, though it also suffered severely, has retained more vigour (these Roses are side by side on the same aspect), and though the flowers are not so profuse as in other years they are scarcely less large. It is a noble Rose, in my eyes the most beautiful of all white Roses, having size, substance, fragrance, and delicacy of form both in bud and bloom, besides being long-lasting in and out of doors. The weather appears to become colder, the 7th inst. excepted, when there was a summer glow in the few hours of rare sunshine. Since then dense thunder clouds have discharged their heavy deluging contents; nor have these rains been followed by the drying winds which, though trying to the tender foliage of the Roses, were useful to the ground, now hardly workable by hand or hoe, and weeds grow strongly where order should prevail.—A. M. B.

#### CATERPILLARS.

THE larvæ of the sawfly (*Nematus grossulariæ*), known commonly by the name of the Gooseberry caterpillar, have played sad havoc amongst the Gooseberry trees in the neighbourhood this year. A swarm of locusts could not have stripped the leaves off cleaner than they have done, and of course the crop of fruit is ruined. On my return from Scotland I found my trees much infested with the caterpillars, so I immediately applied soot, which effectually destroyed them; the constant rains soon washed the trees clean again, so that those which were not too far gone are now bearing a good crop of fruit. In other years I have always applied lime finely powdered, it is milder than soot: but when once these pests get well established, and in such a season as the present, mild antidotes are not to be depended upon.

The way I apply these remedies is this: First, I give the tree a sharp rap, this has the effect of dislodging a large number of the caterpillars; I then shake some soot or lime all around the stem and centre of the bush, especially amongst the young and succulent shoots, for there the caterpillars are generally the most numerous. In a couple of days I look over the trees, again giving a sharp rap as before, and dusting with more lime if necessary. This I have never known to fail, and as I have usually grown Gooseberries by the ton the advice may be worth having. Those who contented themselves by mourning over the destruction the caterpillars were making but did nothing, and those who relied on antiquated nostrums or attempted to pick them off by hand (except in very small gardens), have lost their entire crop, and the trees are injured for another year. Nor is this all; they have inflicted a great loss on their neighbours, for the caterpillars have descended the trees and gone through the pupa stage, which lasts only a very short time (a fortnight or three weeks), and now the perfect insects are flying from bush to bush laying their eggs by thousands. The other day I noticed an extraordinary number of these sawflies (small creatures with yellow abdomens), busy at work laying their eggs, and on turning over the young shoots of the Currant trees I found almost every leaf had the ribs on the under side covered with a chainwork of eggs, so that in less than a fortnight, if nothing be done to check them, the second visitation is likely to be worse than the first.

All who have gardens should look out at once and apply lime or soot if the ravages of these pests are to be checked and the crop of fruit saved. Do not put the soot on too thickly or it will burn the leaves.—F. BOYES.

#### NOTEWORTHY VEGETABLES.

**RUBY POTATO.**—Amongst over seventy varieties of Potatoes planted at the same time on one piece of ground Ruby has come earliest to maturity. As its name indicates it is very pretty in colour, and although classed as a kidney in catalogues it might be taken for a round variety. Considering it to be American it is very fair in quality as well as in crop, and wherever a quantity of very early Potatoes are wanted this variety deserves to be grown.

**VEITCH'S RED GLOBE TURNIP.**—This is by far the best Turnip with which I am acquainted. In shape it is a perfect model, and the quality of it surpasses all others. It is red or purple on the top and white beneath. Its great and valuable peculiarity, however, is the tender and juicy character it re-



tains throughout all kinds of weather; even when heat and drought is making others stringy and flavourless before they are full size this one retains its tender sweetness to the last.

**CARTER'S NEW GREEN-FRINGED LETTUCE.**—Were it for nothing else this new Lettuce is well worth growing on account of its beauty, but it has other qualities requisite in a good Lettuce to recommend it. It belongs to the Cabbage section, being dwarf, spreading at first, and ultimately folding into a good head. Every one of the leaves are as much fringed round the edge as the best Curled Endive, and when a number of plants are seen growing on the top of a Celery ridge, as we have them, their effect is very pretty, many remarking they would do as edges to a flower border.—A KITCHEN GARDENER.

### LUDLOW ROSE SHOW.

THE third anniversary of this well-conducted spirited little Rose Show took place on Tuesday the 22nd inst., and favoured by fine weather drew together a good attendance of exhibitors and the public, and may be pronounced a very creditable success. As usual the Hereford contingent represented almost the entire Exhibition, and it need hardly be stated Messrs. Cranston & Co. among nurserymen and Mr. Jowitt among amateurs carried off every first prize the Society offered. Messrs. F. Dickson & Co. of Chester unfortunately by an oversight lost the second prize in the forty-eight varieties open to nurserymen. A duplicate of that delicate and capricious Hybrid Perpetual Marquise de Mortemar, admirably shown, courting the doom which singly it would equally have helped to avert.

In Messrs. Cranston's fine collection of forty-eight varieties, single trusses, Hybrid Perpetuals, Etienne Levet, Louis Van Houtte, Marquise de Castellane, Elie Morel (a superb bloom), Beauty of Waltham, Auguste Neumann (very dark), Charles Lefebvre, Marie Baumann (glorious), Duke of Edinburgh, La France, Hippolyte Jamain (very fine), and a seedling of Mr. Cant's, which Mr. Jowitt has this year shown so well in almost all his winning collections and thinks very highly of. This new variety met at last with the distinction it deserves by being individualised at the late Birmingham Rose Show by the name of one of the neighbours and patrons of the raiser, as General Evelyn Wood; and indeed for compactness of shape, usefulness of colour (a clear though not bright lake), and reliableness through such a tricky season as we have been passing, it may honestly be voted an acquisition. Mr. J. H. Arkwright took Messrs. Cranston's second prize for twenty-four varieties, single blooms, and Miss Bulmer the remaining second prizes with blooms well staged and large in size, but somewhat deficient in colour.

Among a few of the local nurserymen and amateurs there was room for some slight improvement as regards the blooms they exhibited and their want of style in staging, and this no doubt will take place, as the Exhibition throughout is liberally and efficiently conducted. The suggestion may here be thrown out whether the addition to the prize list of some more remunerative prizes to the large Rose nurserymen, who do not now appear at Ludlow, might not be advantageous to the Exhibition, and at the same time become remunerative by the greater attractions such high-class competitors usually bring with them, especially if the scene of Queen Rosa's court was changed to the historic banquetting hall, a charming spot for the occasion, in Ludlow Castle.—THE HEREFORDSHIRE INCUMBENT.

### GARDENS IN 1879.

"NEVER!" This was in answer to a question whether I ever remembered such a season as the present, and I fancy most of your readers would have made the same reply. I pity all who have gardens, and especially those who have been striving to keep them in order: such a thing has been almost impossible. Such a year as the present is one to be remembered, not only on account of the almost incessant rains, but the great absence of sunshine.

Gardeners have had very much to complain of. First there was a winter of unusual severity and a most trying time for planting; indeed those who were not very early had no time to plant at all, and judging from this district I should say the land was never in proper condition to plant anything until late in the spring. Next we had a very cold and backward spring, and following this there has been no summer, but continuous wet and very cold nights. The consequences are that Peas and other vegetables have suffered severely from the slugs. The Potatoes are very late, with every prospect of disease. Gooseberries and Currants have suffered much from the caterpillars. It has been almost impossible to gather the Strawberries, though there is a fair crop, but slug-eaten and tasteless; and worst of all, our hopes of an abundant crop of

Apples and Pears have been entirely dissipated. This last is a great loss, being the third failure in succession.—F. BOYES.

### REVIEW OF BOOK.

*The Orchard House.* By T. RIVERS. London: Longmans, Green, & Co.

No better testimony of the value of this work, which is devoted to the cultivation of fruit trees under glass, could be adduced than the fact that it has reached its sixteenth edition. The volume is substantially the work of the great master of the art of fruit culture the late Mr. T. Rivers, and has been edited, arranged, and enlarged by the present head of the Sawbridge-worth Nurseries, Mr. T. Francis Rivers. The work is essentially practical and its teachings are reliable, for it does not suggest what may be done in the cultivation of fruit under glass, but records what has been actually accomplished. An instance of the productiveness of an orchard house 100 feet by 24 is tabulated as follows:—

Forty pyramid Peach and Nectarine trees, 8 to 10 feet high, each two dozen	= 960
Twenty-eight ditto 8 feet, each one dozen	= 336
Sixty-seven half-standards, 4 to 6 feet, each one doz.	= 804
Twenty ditto large, each 2½ dozen	= 600
Fifteen ditto Apricots, large, each three dozen	= 540
Twelve ditto small, each one dozen	= 144
Six standard trees, Peaches, planted out, occupying the space of four pyramid trees in pots	= 432
	3816

Or nearly four thousand fruit.

As is fairly observed, the space occupied by the productive house referred to is only that "of a moderate-sized Strawberry bed."

The culture of fruit trees under glass is no longer an experiment. We are told in the preface of the volume that

"The first of the series of orchard houses from which the practical rules have been prepared was built in 1850. After some years the trees became too large for the small original houses, and larger houses were built. Many of the trees have been twenty-five years in pots, and are still full of fruit and vigour. As they have never ceased to bear fruit year by year the conditions of climate and culture must be eminently favourable to the health and longevity of the tree. The long and severe winter of 1878 and 1879 that we have just endured has left my orchard-house trees unscathed. I am afraid that on walls the same immunity will not be enjoyed. The winter will, I am sure, have injured the growth of many Peach and Nectarine trees, and will prove that culture under glass in some form or other must be the only means of ensuring a constant supply of these delicious fruits. In the cold and wet districts of England it is quite hopeless to attempt their cultivation without protection."

How and in what manner that supply can be produced is admirably told in this useful and popular volume. Plain instructions on the erection and cost of cheap and useful houses are given, and the cultural details are clear and explicit. Illustrations of the different styles of houses and trees are scattered through the pages, and render the volume unique of its kind and complete. The cultivation of fruit in the manner described is proved to be profitable. The practice is also a pleasurable one, as is reflected in the closing lines of the book, which we cite—

"I appear in the foregoing pages to have employed a great number of words in the endeavour to make plain this simple, agreeable, and novel mode of cultivating fruit trees. Judging from my own feelings its advantages and pleasures are manifold. Each bud, leaf, and blossom is brought close under the eye of the cultivator. All the minute and beautiful operations of Nature can be closely watched in a genial climate. The silvery covering of the Peach's blossom bud—the beauty of its fully developed flowers (how fresh and happy they always look!)—the anthers shedding their pollen—the germs gently swelling—the downy, ruddy, luscious-looking coat of its charming fruit, are all calculated to give pleasure to the healthful cheerful mind; for the varied works of Nature's laboratory are brought near to the eye, near to the mind, near to the heart, which is instinctively lifted in thankfulness to the Giver of all such good and beautiful things."

### NOTES ON VILLA AND SUBURBAN GARDENING.

DURING the cold and wet weather which has characterised the greater part of the present month most bedding plants have suffered severely. Pelargoniums have produced very few flowers but an abundance of coarse foliage, while the Alternantheras and such plants now so much employed in carpet bedding are devoid

of colour. On the other hand *Calceolarias* and some of the varieties of *Pansies* and *Violas* are thriving admirably, and supply shades of colour that are very desirable during the present dull season. The season for effective display can now only be of very short duration even if the weather becomes bright and warm; therefore all beds and borders should have prompt and careful attention, keeping the grass evenly mown, the edges neatly trimmed, and the beds frequently hoed.

**Roses.**—Although in most places these were very late in coming into bloom the foliage and quality of the flowers have indeed been very fine, and never do we remember the darker flowers so striking before. A few of the light *Roses* have been disfigured by the wet weather, but the effect of the excess of moisture is very visible in the healthy foliage as well as in the substance and development of the blooms. Their season of flowering is much longer than usual, and unless we have some extremely hot weather there will be good blooms for some time yet. Budding may now be performed as rapidly as possible; the stocks are now in good condition for the operation. Carefully select buds that are plump and firm and of moderate size. Cut away the leaf and remove the thorns; then with a sharp knife take out the bud, separating the wood from the bark without injuring the bud itself: then open the bark on the stock by drawing the point of the knife down the centre of the shoot where it is intended to insert the bud, and make a cross cut at the top where the other begins, raise the corners of the bark sufficiently to allow the bud to be fixed neatly in, and then bind with a piece of worsted or neat bass. It will require to remain in this state for five or six weeks, when the ligature may be loosened.

**STRAWBERRIES.**—Strawberry plants on some soils last much longer than on others, but as a rule two to four years is as long as they should remain without being renewed. The late showery weather has been very favourable to the growth of runners, and the earlier new plantations are made the more prospect there is of a good crop next year. Strawberries delight in a well and deeply dug piece of ground. Plant them in rows 2 feet apart and 18 inches between the plants. The runners are best carefully lifted with a trowel, and if the weather is dry they should be well watered until established; and if this is done at once they may be expected to bear a good crop of fruit next summer.

**POTATOES.**—Since the heavy rains of the 19th, 20th, and 21st inst. the Potato disease has become visible in many gardens among the early crops. It is surprising how the disease spread during the above days in the neighbourhood of London. Our advice to those who have Potato crops similarly affected is to lift them and plant the ground with Broccoli or winter Kale. The Potatoes will not be anything the worse for lifting even if the skins are not fairly set, and the chances are the greater part of the crop will be saved, whereas if they are left in the ground the disease will affect the whole of the tubers, and the winter crop of greens will be delayed also.

Hedges of all kinds should now be neatly trimmed. Laurel and all large-leaf plants are best cut with a knife, but Privet, Holly, and Thorn are quickest done with a pair of garden shears. We cut our hedges up to a sloping point instead of retaining a flat top, as we have an opinion that hedges so treated are kept thicker in the bottom.

## WORK FOR THE WEEK.

### FRUIT HOUSES.

**Orchard House.**—The fruit trees in this structure—such as Apricots, Peaches, Nectarines, Pears, and Plums, will be rapidly swelling their fruit, and water should be supplied abundantly whether the trees are planted out or in pots. Renew the top-dressing of trees in pots as may be necessary, and water with liquid manure occasionally, taking care not to employ it too strong, being guided in its application by the crops the trees are carrying and their vigour. A moist genial atmosphere must be maintained so as to assist the swelling-off of the fruit; and as a means of keeping insects in check syringe the trees freely and close the ventilators between five and six o'clock each evening, except when the weather is warm, when they may remain partially open. Stop or cut back strong growths as may be necessary, in order to admit light and air freely to the fruit and for the purpose of solidifying the growths. Fig trees in pots should still have the young shoots stopped as may be found necessary, affording plentiful supplies of water whilst the fruit is swelling, being careful to avoid any check to the trees, which is almost certain to cause the dropping of the fruit. Syringing will be necessary to keep red spider down, and should be continued until the fruit is ripening, when it must be discontinued or the fruit will be damaged. Except in very favourable seasons a second crop of ripe Figs is not to be depended upon in a cold house, but trees that are in good health and have had the shoots carefully stopped will afford a second crop little if at all inferior to the first if the trees are removed as soon as the first crop is gathered to a light airy house where they can have the benefit of artificial heat. Grapes in this structure, whether in pots or planted out, will require to have the fruit carefully thinned, cutting out the small

seedless berries and those too thickly placed, so as to prevent the berries from being wedged. The laterals should be kept closely pinched to one joint, especially when trained over the pathway, so that the trees beneath may not be unduly shaded, but the Vines in pots may be allowed to carry as much foliage as can be exposed to light. Cherry trees in pots should, so soon as the fruit is gathered, be removed to a sheltered sunny spot outdoors, to harden the wood and ripen the buds for the following season. If at all infested with insects such as black aphides, red spider, &c., the trees should be thoroughly cleaned by the application of an insecticide and repeated syringings, so as to retain the foliage in a healthy condition as long as possible. The trees must not be allowed to suffer through insufficient supplies of water, the pots being placed on a good bed of ashes.

**Vines.**—To insure late Grapes keeping well they need to be early and thoroughly ripened. The latest crops ought now to be colouring. Gros Guillaume and Gros Colman take a longer time in ripening than some others. The two former with Lady Downes', Alicante, Mrs. Pince, Trebbiano, &c., require as high a temperature as the Muscat of Alexandria to finish the fruit off properly—viz., a night temperature of 70° to 75°. Both Muscats and Lady Downes', especially the latter, should have abundance of air, with a night temperature of 70°. Inside borders must not be neglected in watering; those outside in most localities have been sufficiently drenched with rain for the season. Though we advise the extension system, it is not desirable to allow the laterals to get crowded or matted together before pinching them, as it gives a severe check, often resulting in shanking; therefore keep the growths well in hand so as to admit light to have access to every leaf. The excessive rains will have a tendency to keep early Vines with their roots outside growing on, to prevent which persist in pinching off all lateral growths as produced, and if means are at command for throwing off the wet employ them so as to induce early maturity and rest. Young Vines should be kept in full growth by the maintenance of a humid atmosphere and a night temperature of 70°, closing early in the afternoon. In order to preserve black Grapes at this season as long as possible it is essential that the Vines have very good foliage in order to prevent the sun from taking the colour out of them, or if the foliage be thin a light shading will be necessary. Examine the bunches occasionally for shanked or decayed berries, and keep the house dry, airy, and as cool as possible.

**Peaches and Nectarines.**—Every attention must be given to trees in the late succession houses as regards syringing to keep the foliage free from red spider, and in watering the inside borders. The shoots must be kept regularly tied-in, and to assist the colouring and ripening of the fruits they should be exposed as much as possible to the influence of the sun and air by removing or shortening some of the foliage where too thickly placed. Where the fruit is on the under side of the trellis the shoots may be untied and regulated so as to bring them with the apex to the light, supporting them in position by laths placed across the trellis. A piece of hexagon netting placed below the trees when the syringing is discontinued will save any fruit from being bruised should they drop off. In the latest houses give careful attention to syringing, also to watering the inside borders, tying in the shoots regularly, and keeping them rather thin. When the fruit is swelling after stoning close the houses somewhat early in the afternoon, ventilating a little before nightfall.

**Cherry House.**—The trees should now be as fully exposed to air as the house will admit, which is the best means of arresting premature growth, to which the Cherry when forced year after year successively is liable. The leaves from their hard texture are not very inviting to black aphides, but if they appear syringe or dress with tobacco water, and for red spider give an occasional washing with the syringe or engine. The border must not be allowed to become parchingly dry, but must have a copious supply of water, and if the trees are weak add a little guano. Trees in pots must be regularly watered and syringed to maintain the foliage in a healthy state as long as possible.

**Cucumbers.**—These have been more crooked and stunted generally than we remember for a long time, due no doubt to the cold, wet, dull weather. In fine weather fire heat may safely be dispensed with, but in such dull and wet weather as we have at present experienced fire heat will need to be afforded to maintain a suitable temperature. Strive to preserve a healthy root-action by a bottom heat of about 80°, keeping the plants well supplied with water, and occasionally with liquid manure. Let the plants be regularly looked over once a week, removing the exhausted growths to make way for young bearing wood. Syringe moderately at closing time, doing so as early in the afternoon as the brightness of the sun will admit, the ventilators being closed for a couple of hours; then admit a little air for a short time to allow the rank steam or moisture to escape, having the foliage fairly dry before nightfall, especially if fires are dispensed with. The plants for autumn fruiting should be planted out without further delay, planting them moderately firm on hillocks or ridges. In pits and frames former instructions will need to be still followed, removing old and overgrown foliage and growth, pinching out the growing points above the fruits as soon as practicable.

## FLOWER GARDEN.

Flower gardens ought now to be at their best, but owing to the incessant rains during the greater part of July they are in most instances in a miserable plight. *Violas*, *Verbenas*, *Lobelias*, and *Calceolarias* have made splendid growth: all that is wanted is bright weather, as there is but little bloom on bedding plants. *Pelargoniums* have produced much foliage, and where the plants are at all thickly placed they become drawn, producing very little bloom. To check this tendency to over-luxuriance many of the large old leaves should be picked off, and where the growths have become drawn and thick the more sappy may with advantage be thinned out. The shoots thinned out may be inserted in sandy soil fully exposed to the sun. The season has not only been unfavourable for the Zonal *Pelargoniums*, but the Tricolor and Bronze varieties have not made such headway as might have been expected, owing no doubt to the ground being so cold. The propagation of the variegated *Pelargoniums* is put off until a late period of the season, as many do not like to commence cutting the beds directly they begin to fill and look well; indeed it is not desirable to make gaps and spoil the appearance, as is too often done at a much later period. Where there is a reserve garden we advise the propagation of the variegated section to be proceeded with as soon as possible, and when these are in follow with the green varieties, for they strike much more readily and winter much better. Even *Verbenas*, *Heliotropes*, *Cupheas*, &c., will strike now in a cold frame, whereas later on they require a hotbed, neither affording such stocky plants nor wintering so safely as the earlier-struck plants.

**Carpet Beds.**—These are taking the "shine" out of every other description of bedding, especially as many of the plants now employed for the purpose are hardy. Make a point of looking over the beds for the purpose of pinching and pegging twice a week, so as to keep the lines, &c., distinct, as no beds pay so well for attention as these. Subtropical gardens are not always practicable, as from the largeness of the foliage, as well as in some instances stateliness of growth, they require sheltered spots, and where such exist no more effective display can be produced than is afforded by these plants. Protect from wind and storms all tall growers by timely stakings. *Dahlias* and *Hollyhocks* should be tied as they progress in growth, thinning out the side shoots of the former where too crowded, as an open head will afford much finer blooms. *Clematis* and *Tropaeolums* should be trained early, but avoid too much stiffness, which certainly spoils the effect in all but the most formal arrangements. Continue to tie and support the various border flowers as they advance in growth and require that attention, removing dead flowers and seed pods from such as are going out of bloom. *Pippings* of *Pinks* may still be inserted; any that are rooted may be planted out. *Carnations* and *Piotees* should be at once layered, sowing seed in pans placed in cold frames. Cloves strike freely from pippings inserted in sandy soil covered with a handlight on a north border or shaded from sun. *Roses* have had a hard time, but are improving, and they should have every encouragement. *Rhododendrons* should have the seed vessels removed, also *Azaleas*. Lawns never looked better than this season, and the foliage of deciduous trees is grand. Conifers are making splendid growth. Weeds are very abundant. Hand-weeding is a tedious, but in a wet season the only sure, mode of having walks, beds, and borders in order. Ragged edgings are equally objectionable, and should be frequently trimmed with the edging shears.

## PLANT HOUSES.

**Orchids.**—The temperature of the East India house may range from 76° to 85° by day, with an average night temperature of 65°; the *Cattleya* house about 5° less. Continue the same general treatment for the occupants of the East India house, dispensing almost entirely with shading on the *Cattleya* house, shading only when the sun is very bright, as to leave it off entirely may have disastrous consequences. Early-flowering plants will in many cases require to be removed to a cooler house, their growths being completed where the heat and moisture is less and a larger supply of air can be admitted. *Dendrobium nobile*, *D. Cambridgeanum*, and many others should be placed where they can receive all the light and sun to ripen their new growths. *Cattleyas* making their growths should receive every encouragement, it being a good plan to place a lump of peat underneath the growth so soon as they are sufficiently advanced, which induces an earlier production of roots and in a measure protects them from insects. *Calanthe vesita* and *C. Veitchii* should not be shaded any longer, but be liberally supplied with water for some time yet. Woodlice are very destructive to the young roots of *Orchids*, therefore watch carefully for them. If there be any thrips, which are often troublesome at this season, fumigate frequently, washing the foliage with soft soap, about 3 ozs. to a gallon of water, sponging afterwards with clear soft water. The *Odontoglossums* have had a fine time this season, as there is not much difficulty in maintaining coolness and moisture, which suits these plants admirably.

## TRADE CATALOGUE RECEIVED.

Messrs. T. H. P. Dennis & Co., Anchor Works, Chelmsford.—*Illustrated Catalogue of Garden Structures.*

## TO CORRESPONDENTS.

**BOOKS** (*Manus Hall*).—Perhaps "Barley on the Mushroom," published by Bradbury, price 1s., will suit you.

**EMIGRATION** (*J. H.*).—We are not acquainted with the Company to which you refer, nor of the advantages which the country named offers for emigrants. In a matter of so much importance we advise you to act with due caution and consideration, obtaining, if possible, the advice of someone who has had experience of the territory that has been brought to your notice, and of the working of the system suggested.

**TEA ROSES TO FLOWER AT CHRISTMAS** (*Master George*).—If the plants require more pot room it should be given at once, merely removing the loose soil and crocks and affording pots 2 to 3 inches larger in diameter. Place the pots on ashes, allowing the plants plenty of space and keeping them well supplied with water, and when the plants are filled with roots water occasionally with liquid manure. Remove all flowers up to the early part of September, when any straggling growths should be cut in, and in October place the plants in a light airy house.

**BLOOM ON GRAPES** (*Idem*).—It is being formed from the time the stoning is completed until the Grapes are thoroughly coloured, hence the most experienced Grape cultivators do not syringe the Vines after the swelling. Some do not syringe after the berries are set.

**ROSE** (*Mrs. Henderson*).—The description answers to Dundee Rambler, white tinged with pink, but it is not Tea-scented, which would point to its being *Ruga*, a beautiful and fragrant Rose of a pale flesh colour. The *Ayrshire* Roses have been originated from *Rosa arvensis*, or creeping single white Rose of our woods and hedges, which being crossed with some of the hybrid kinds has acquired much additional vigour, as all hybrid Roses almost always do whether the impregnation be artificial or accidental. They are marked by very strong growth and free-blooming qualities.

**DESTROYING WEEDS ON WALKS** (*Idem*).—We do not know what is the price of virinol, but you may ascertain the lowest price by inquiring of a wholesale druggist. For destroying weeds in walks, &c., dissolve 1 lb. of powdered arsenic in 3 gallons of cold water, boil and keep stirring; then add 7 gallons of cold water and 2 lbs. of crushed soda, and stir the whole well whilst boiling. Apply to the walks in dry weather, taking care to keep it from the grass or Box edgings. The above will be sufficient for 35 sq. yards.

**ROSES FOR BEDS** (*Bury*).—You could not have six better dark Roses than *Senateur Valse*, *Charles Lefebvre*, *Duke of Edinburgh*, *Prince Camille de Rohan*, *Madame Victor Verdier*, and *Fisher Holmes*, *Alfred Colomb* being a grand bedder. Six rose-colour varieties are *Marquise de Castellane*, *Mons. Noman*, *Anna Alexieff*, *La Franco*, *Lyonnaise*, and *Marie Louise Pernet*. Those may not have the perfume desired, but are best for the purpose. Some highly scented Roses are *Marie Theres*, rose colour; *Rosy Morn*, peach shaded salmon-rose colour; *Queen Eleanor*, pink; *Oxonian*, rose; *Souvenir de Louis Van Houtte*, crimson changing to violet; *Marchioness of Exeter*, rose, flushed cherry red; *Mdlle. Marguerite D'Ombraun*, satiny rose; *May Quennell*, carmine shaded crimson; *Madame Vidot*, pale flesh; *Madame Eugene Appert*, rosy pink; *Madame Ferdinand Jamin*, rosy carmine; *Charles Baltet*, carmine red; *Baronne Louise Uxull*, rose; and *Bessie Johnson*, bluish white. We should prefer them on the seedling Briar preferably to on their own roots, as on the latter they do not succeed well except in very favourable situations, and are more vigorous and floriferous on the seedling Briar. The old Cabbage Rose or *Provence* may be had of any of the principal nurserymen; also the common or old Moss Rose, which is very handsome, the common *Provence* or Cabbage Rose being very sweet.

**MOVING CURRANTS, &c.** (*Four-years Subscriber*).—You cannot move any deciduous trees or shrubs now, you must wait till the leaf falls. Your employer must have been misinformed.

**GRAPES DECAYING** (*J. Mark*).—This is no doubt due to the cold, wet and sunless weather of the season, the evil effects of which have not in your case been obviated by sufficient fire heat. The berries bear no trace of injury from scissors or other instrument. Possibly the agreeable change in the weather we are now experiencing will produce a corresponding improvement in your Vines.

**PEAT** (*H. R. H.*).—There are two distinct kinds of peat, both consisting mainly of vegetable matter more or less decayed. One kind of peat is firm, and contains a natural admixture of sand, the other being more light and mossy in its nature. The former is used for *Azaleas*, *Heaths*, and hard-wooded plants generally that require soil of this nature, the other being employed for *Orchids*. Peat and soil of all kinds are advertised in our columns. In ordering you have only to state whether you require *Azalea* or *Orchid* peat, and the right kind will be sent.

**SHOW PELARGONIUMS** (*D. E. York*).—The present is a very good time for purchasing plants, provided you do not object to have plants that have just ceased blooming, and which are consequently not particularly attractive. It is worth remembering, however, that such plants on being cut down will supply you with some useful cuttings, and you will consequently be able to increase your stock of the varieties sooner than if you deferred the purchase of plants until the spring.

**THINNING SPRKALE** (*A. B. C.*).—If the growths are numerous lose no time in thinning them, when those left will form finer crowns and yield much better produce. Four or five fine heads of "Kale" are much more creditable to the grower and satisfactory to the consumer than a dozen that are thin and puny. It is impossible to produce fine heads in spring by any system of management if the growth in summer is permitted to be, as is too often the case, much crowded.

**HEMANTHUS KALBREYERI** (*Inquirer*).—It was named after Mr. W. Kalbreyer, one of Messrs. Veitch's collectors, who discovered the plant in South Africa. This brilliant species is correctly described in Messrs. Veitch's catalogue as producing a splendid flower head fully 8 inches in diameter, and consisting of a somewhat dense and remarkably striking umbel of upwards of a hundred flowers of the brightest vermillion red. The filaments are of the same brilliant colour as the perianth segments, and terminate in small oblong deep yellow anthers.

**SOWING KIDNEY BEANS** (*A Young Gardener*).—Beans sown now can scarcely be expected to produce a crop without protection in the autumn, yet if the winter happens to be deferred in anything like the proportion that the summer has been, the plants may yield a few useful dishes. You should sow them, however, in a position in which they can be sheltered in late autumn. If you can place over them any spare frame lights you will be able to gather several dishes that are certain to be appreciated, because at that time the crops in the open will have ceased bearing, and only the commoner kinds of vegetables will be in season.

**SEA SAND FOR POTTING (R. T.).**—This sand is well suited for plunging the pots in, and we have also known instances where it has been safely and even beneficially employed after being well washed for mixing with soil used in potting various plants. Of course nothing can surpass white silver sand for all ordinary purposes, but where that cannot be readily obtained and sea sand is plentiful we should not hesitate to employ it after adopting the precaution of washing it.

**SUMMER-PINCHING FRUIT TREES (J. Wilson).**—We not only advise summer pinching, but summer pruning too, when the trees are unduly crowded. In consequence of the absence of fruit in too many instances, and also the absence of frost in spring and sun in summer, fruit trees, like forest trees, have grown with unusual vigour this year, and summer pinching and pruning become the more necessary. Read what "NORTHERN GARDENER" has said on this subject in another column, and when you see his remarks you will probably prune your trees.

**ORIOLOGYNE OCHILATA (J. B. D.).**—This is a dwarf free-flowering Orchid with white sepals  $1\frac{1}{2}$  inch in length, the sides of the throat and lip being marked with canary yellow. It is very pretty and quite worthy of being added to your collection.

**USEFUL ABUTILONS (Idem).**—It is not easy to select what you term "three useful and distinct Abutilons" from so many that are good, but the following will perhaps suit you:—Boule de Neige, white; Boule d'Or, yellow, and Roseflora, rose; yet distinct from them all and attractive is A. Darwinii tessellatum.

**"NATIVE DIONÆA" (W. R.).**—The plant you sent is *Drosera rotundifolia*, the common Sundew, and one of the notorious carnivorous plants. It is moderately abundant through the British Islands in marshy and boggy situations. It has some commercial value, as it is grown for sale by the majority of large nurserymen. Of late years there has been a good demand for it, not only on account of its peculiar properties, as the little plant is very pretty when covered with the numerous dewdrop-like exudations from the points of the hairs which clothe the blade and petiole of the leaves.

**SEWAGE TANK (J. E.).**—You do not require to use anything to fix the ammonia. Water at 50° is capable of absorbing 670 times its volume of ammonia.

**TULIP BULB (C. U. Norwich).**—The formation of a bulb on the stem of a Tulip just above the soil is not unusual. A bulb is an underground bud, and in the specimen you have sent us it has been produced just above the soil instead of beneath it. We cannot account for the cause with certainty, but it may be attributable to the wet season, which has induced inordinate growth in all plants.

**STOVE PLANTS FOR HANGING BASKETS (J. D.).**—The *Echynanthuses* are all fine plants for baskets, *E. grandiflorus* being the best. *Agalmia staminea* is also suitable, and *Coccydopseum discolor*, the latter bearing pretty purple berries during winter. The finest of all basket plants for the summer are *Achimenes*, and for flowering in winter *Epiphyllums*, the plants being grown in pots and placed in the baskets after the *Achimenes* are removed.

**PIPES FOR HEATING A PIT (H. K. L.).**—A 2-inch pipe all round would be sufficient to exclude frost. A larger size of pipe would be better on account of retaining the heat longer, but when highly heated it would give out too much heat, and it will be necessary to have valves on the pipes in the pit to shut off the hot water when not required.

**ROOTS OF THE YEW (Richard Fidler).**—We do not anticipate any evil results from the roots of the Yew being in the water of the well, but in a case like that the safest and most judicious course would be to have the water analysed by an experienced chemist or analyst.

**VARIOUS (Edith).**—Water containing soap and soda will improve instead of injure your Myrtle. The green and yellow stains on the verandah can be removed by the application of a strong solution of common salt. According to the daily papers of the 14th inst. a few real Violets were employed at the Prince Imperial's funeral. If this was correct, the fact of flowers being obtainable in the middle of July was no doubt due to the unusually late season, which has prolonged the flowering period.

**TEA PLANTING (J. Green).**—We have no knowledge as to the state of the Tea trade in India, and we are sorry we have no opportunity of recommending you to a situation in any of the gardens there.

**MELON ROOTS DISEASED (W. B. M.).**—There is no doubt that the excessive wet weather and the absence of sun are the cause of your Melons being in the state they are.

**NAMES OF PLANTS (Yorkshire).**—The yellow flower is *Hemerocallis flava*, the other *Lilium Martagon*. (*Young Gardener*).—1, *Spiraea Aruncus*; 2, *Nepeta tenebrifolia*; 3, *Hemerocallis flava*; 4, *H. fulva*; 5, *Philadelphus vulgaris*; 6, *Gladiolus communis*. (*W. D. H.*).—*Erythraea latifolia*. (*W. W. A.*).—1, *Viburnum Opulus*; 2, *Drosera rotundifolia*; 3, *Cenomyce coccifera*. (*M. B.*).—The leaf is that of a *Megasea*, and does not belong to the flower, which is an *Ornithogalum* of some kind. (*Constant Reader*).—12, *Pinus Lowiana*; 13, *P. cephalonica*; 14 appears to be *Quercus glabra*; 15, *Abies Douglasii*; 16, *A. Smithiana*; 17, is a *Juniperus*; 18, *Populus tremula*. (*T. S.*).—*Habenaria bifolia*. (*W. D. H.*).—*Santolina incana*. (*S. A. C.*).—1, *Chrysanthemum coronarium*; 2, *Jasminum gracile*; 3, specimen not sufficient; 4, *Monarda didyma*; 5, *Lycium europæum*; 6, *Cotoneaster rigida*. (*George Murray*).—The specimen with large leaves is *Magnolia tripetala*, the other is *Polygonum Sieboldii*. (*Tosill*).—*Ptelea trifoliata*, North America. (*Mac*).—The shrub is *Rhamnus frangula*, and the *Elaeocharis* is multicaulis. (*M. M.*).—*Begonia dioica*. (*K. T.*).—*Diplacus glutinosus*. (*R. F. Wheeler*). 1, *Sedum oppositifolium*; 2 and 4 are *Sedums*; 5 is a *Sempervivum*; 6 is a *Saxifrage*; 3 is *Lysimachia Nummularia aurea*; 7, *Sedum carneum*. We cannot determine the specific names of the others without flowers.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### THE ROT, COATHE, OR BANE IN SHEEP.

THIS disease, according to the majority of both veterinary professors and practical farmers, is in their opinion an affection of the liver, and is commonly called rot; but coathe is the term

used to designate it in Devonshire and Dorset; and bane in Somerset. Formerly, and in the early part of the present century, sheep were more frequently affected by this disease than they have been during the last twenty or thirty years; this is owing in a great measure to the disease and its causes being better understood and provided against by the flock-masters. The lands and pastures, too, upon which sheep are fed have been extensively drained in each of those counties where the animals have been known formerly to suffer most. The testimony of some of the most practical men and largest flock-masters concur in their evidence that autumn is the season when the disease is contracted, and we may point out moist warm weather in autumn. Prevalence of misty rain and heavy night fogs, and rain falling at a high temperature causing a rapid growth of herbage, are generally admitted to be amongst the first causes of the disease; also when the sheep are feeding upon grass the produce of clay lands and boggy lowlands, where the superfluous water cannot easily escape, and more particularly upon pastures receiving the waste and drainage from higher situations, and that have been flooded, the water having subsided and left the stems and roots of the herbage in a moist and sodden state.

We find it recorded that the most fatal years in which rot prevailed were 1809, 1824, and in 1830; and it is stated that although the annual loss from sheep rot had been estimated at one million of fatal cases, yet the loss was more than doubled in each of these years. We can testify, not only from numerous instances which occurred, but from our experience, to the great losses sustained from the rot in 1830, for we purchased one hundred Dorset horned ewes which turned out to be unsound. We sued the breeder for compensation, and we were awarded a sum of money by the arbitrator to requite us for some of the loss which we had sustained from the ewes being unsound; nor was our purchase an isolated case, for large numbers of animals in our district were affected also. No attempt was made to defend the case, as the flock from which our purchase was selected had proved unsound also, nor could anything be alleged against us of the animals having contracted the rot after being in our possession, for they were with the greatest care fed upon sound healthy land and with liberal supplies of nutritious food. As soon as we had reason to believe that the ewes were unsound we resorted to cracked beans as food for them in addition to the customary food of roots and hay; and although the livers of the ewes proved to be infested with the fluke parasites, yet they did not die off as they often do in such cases, but suckled their lambs very well. The lambs made a fair price in the market, but not so with the mothers, for they could not be fattened with the best of food; and although they originally cost 30s. each, which at that time was a full price for good stock of the Dorset horned breed, yet the greatest part of them only made from 18s. to 15s. each when sold in the month of May, after being fed at heavy cost and with great care and attention. We attribute our absence from loss of ewes by death to the circumstance of feeding with beans and other nutritious food. We can also refer to numerous instances in which when the sheep were known to be unsound and contained flukes in the liver, yet from receiving a generous diet they have been kept alive, and in some cases where the disease had only just commenced been known to fatten and become fit for slaughter.

Our object in noticing this subject at the present time is in consequence of the peculiar season which we have been passing through for some months past, in which heavy flooding rains have prevailed during the spring and summer up to the time at which we are writing. We think it advisable to call the attention of the home farmer to the strong probability of sheep suffering from this disease during the next autumn unless caution is used by adopting all the known methods of prevention. There is, however, no cure of the coathe or bane, because with all the care that we have used or seen recommended for use it can only be palliative, for when once the flukes have taken possession and established themselves in the animal's liver it is sure to prove fatal sooner or later.

It is of great consequence, too, that the home farmer should

know the fluke when seen in the liver, because when sheep are killed for use at the nobleman's or gentleman's house and it is detected means must be immediately adopted to prevent further injury, and if possible to protect and save any animals which may not be affected. We, therefore, give some illustrations of this parasite known as the liver fluke (*Distoma hepaticum*), taken from a liver, the bile ducts being perfectly filled with them (fig. 11). The specimens were placed on glass and carefully traced, so that the sizes are strictly preserved, and the anatomy—external and internal, as far as it can be seen by the unassisted eye—is faithfully represented. Our second illustration (fig. 12), which has been copied, with a few alterations, from Rymer Jones on "The Animal Kingdom" represents these various parts as they are seen after minute dissections—not in one view as here depicted, but laboriously traced out by the aid of needles and magnifying glasses.

The origin and propagation of the "fluke" is so important that we shall here allude to it, and the existence of a large number of living beings within the organisms of other creatures is so commonly recognised that no wonder is expressed or felt at the circumstance; nevertheless the fact is sufficiently remarkable to have

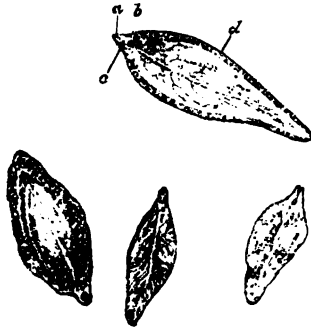


Fig. 11.—Flukes from the gall-ducts. The ramifications of the digestive tube are seen filled with bile.

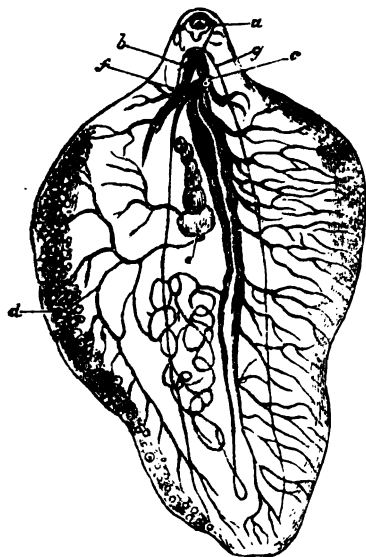


Fig. 12.

Fluke dissected; the inferior sucker and one side of the digestive tube removed.

- a, Mouth, or anterior sucker.
- b, Digestive tube, usually filled with bile.
- c, Male generative organ, with the numerous convolutions forming the testicles.
- d, Ovary; the tubes terminate in the uterus e, which opens at f.
- g, Nerve, running down each side to the terminal portion.

aroused the attention of physiologists in all times. The difficulty of explaining the presence of parasites in certain parts of the body has been considered almost insurmountable, and hence the theory of "spontaneous generation" was for a long time a favourite refuge of speculative observers. But the theory is utterly crushed by the weight of the single fact that the entozoa for the most part possess reproductive organs, often developed to an extraordinary degree, as will be noticed in fig. 12 especially. If the parasites were formed from any of the organic particles of the animal they inhabit such organs would be entirely useless, and that they should so exist is contrary to the analogy of Nature. The introduction of the entozoa from without may be fairly assumed in all instances; indeed, the farther the researches of physiologists extend the more decided becomes the conviction that the germs exist exterior to the body of the animal they are hereafter to inhabit. This theoretical view of the subject receives

strong confirmation from our practice as flock-masters, and from the fact that the animals only suffer from the fluke under circumstances which are well known and defined—that is, when they have been feeding upon herbage growing in moist and boggy situations, but more particularly in humid and misty weather. It is fair to infer that it is under these conditions only that the entozoa exist and are perfected, and that they cannot and do not exist upon the pasturage of high and dry soils. Our practical observation and management of sheep, however, enable us to say that although the animals may take the entozoa into the stomach in the act of feeding they will not necessarily breed the flukes in the liver. We know that when we have fed our animals on pasturage known as dangerous and unsound for sheep, and which we have done for many years in succession, yet we have entirely escaped from the usual losses consequent upon such feeding by a system of careful management and daily detail of changes of food and pasturage, which we propose to consider and give fully in our next and concluding article.

(To be continued.)

#### WORK ON THE HOME FARM.

**Horse Labour.**—This is now greatly required upon the home farm, and has lately, on account of the extremely wet and unseasonable weather, been almost useless, except at unimportant work, for the sake of keeping the horses in health and working condition. As soon as we can get a few fine days the work should be extended by making longer days and giving extra food to enable them to accomplish what may be required of them—in fact, by making longer days is the only way to make up for the loss of time which now, with some intervals, has extended over three months. A less acreage of mangold than usual has been drilled, and the same may be said of Swedes. The loss of a large breadth of these roots upon the home farm will be severely felt in the next winter and spring, because under certain systems of stocking the home farm the animals must be fed at a greater expense than usual for purchased food, or a large reduction of the stock must be made by sale of some of the animals. There is, however, still time in the southern and eastern counties, and in some of the home counties as they are termed round the metropolis, upon the dry soils to drill the Scotch Yellow Hybrid turnips, together with Grey Stone turnips, which to a certain extent will supply the place of Swedes. A fair crop may be obtained should the weather become drier within a few days. At the time we write the land is so wet on the fallows that the horses cannot enter the fields, the only chance being to plough and sow after the hay crop or some of the fodder crops, such as vetches, and sow the turnips the same day as the land is ploughed. In such a season as we are experiencing this is the only way to drill with a fair prospect of obtaining a crop of roots. We must not, however, forget that the quick-growing varieties of cabbage may still be planted, such as the Enfield Market or Imperial; and the tall rape or coleseed may also be sown if required for cutting as fodder for dairy cattle in the early part of winter, or for folding off with sheep upon the land.

It appears that the harvest of the cereal crops will be delayed so far beyond the usual time that it will be quite speculative as to obtaining good winter food by sowing stubble turnips; but they may, if kept until the spring and allowed to run up into greens, furnish useful food in the month of March, and in the absence of Swedes or mangold it may be worth attention. We have sometimes managed in this way, and have sown mangold seed afterwards. It would not, however, do to sow Swede seed after the turnips that have been fed off, as they usually die when drilled after turnips, on account of the decaying portions of the roots causing an unhealthy growth of Swedes, and where the land is at all deficient in chalk or lime they will become club-rooted. Should the season continue as at present there will be no healthy growth of roots, the weeds having injured them. In 1860 it was the same—root crops did not flourish first or last during the whole season, but the mangold suffered more than the Swedes and turnips in that year, owing to the low temperature. We, however, purchased our store sheep and bullocks at a low price in the autumn of that year in consequence.

**Hand Labour.**—This is unfortunately being done without advantage at present. Hoeing among the mangold and Swede crops does not kill the weeds, and turning the hay does little beyond exposing it more to the succeeding rains. Very little hay of either arable or pasture produce has been stacked up to the time we are writing. Much has been entirely spoiled as fodder, should the weather eventually prove ever so fine for stacking it. Dairy cows have been doing badly where they have not received supplementary food, such as vetches, clover, or border grass, as the meadow land is in many instances so trodden by the stock as to make the food very unpalatable. In other cases, even on the best vale grass land in various counties, the fattening bullocks or sheep have not made the progress that could be desired or that they usually do, although they may have received a fair allowance of oil cake, the grass being watery and deficient in nutrition. The yearling off heifers intended for the dairy should now have a well-bred yearling off bull to run with them until the end of August,



or until they have all been served; they will then drop their calves at the best time of year, about the end of April or early part of May. They should, however, be taken to high and dry pastures for lying at night if possible, or otherwise they should have some oil cake or cracked beans to keep them healthy in such an untoward season as is now prevailing. The ewes, too, will now require attention. The horned ewes kept for stock or for breeding early lambs will have now nearly all offered to the ram, and will bring their lambs in good time. The down ewes, too, where they are required to lamb early, should have the rams turned in with them directly if the lambs should be required for the Easter markets. To breed these early lambs the Dorset and Somerset downs answer the best purpose, for many of these flocks originally came as a cross from the horned stock of these counties, and this circumstance is much in favour of their offering early to the ram, and more so than the Hampshire downs, whether reared in Hants, Wilts, or Berks, and the same must be said of the Sussex downs.

### THE HIGH PRICE OF MEAT AND ITS REMEDY.

CONSUMERS of meat on the one hand complain of high prices, while producers on the other are deploring the low value of their animals as obtained in the markets. Both these sections complain justly, for both suffer, those who benefit being the salesmen and middlemen. On this question, which is an important one, we have received a letter from Mr. Peter Naylor of Basingstoke, which has been published in the *Agricultural Gazette*, and from which we cite the following:—"The high price at which meat has been sold for a long time past has been no compensation to farmers for the low prices of other produce. They have been robbed of their profit by middlemen, while the high prices obtainable here have attracted the foreigner to our markets. It is too late now to stop the influx of American meat. An enormous increase may be expected from the steps already taken in that direction. English farmers might distance competitors in the superior quality of their meat; but, to their shame be it said, English butchers are found to aid the foreigner, not by placing their meat side by side in fair competition, and selling each at market value, but by passing off American meat as British at the highest price.

"What is the remedy for this state of things? My answer is, that British graziers must 'take the bull by the horns,' and wrench the home meat trade from the hands of those now in possession of it. Let them abolish the butchers, and with them the dealers in fat stock. Let the law of supply and demand alone regulate the price of meat in future, free from the 'operations' of the middlemen.

"Nothing less than a complete revolution in the home meat trade should be aimed at. Notwithstanding the opposition to be expected from various quarters interested in the maintenance of things as they are, a sound opinion is current that this can be done if landowners and tenant farmers will individually and collectively act with promptness and decision. Whatever may be said to the contrary, the interests of producers and consumers are in the long run identical, and in none more so than on this meat question. The co-operation of the consumers may be relied on, for at present their prejudices are strongly in favour of the home article, but the initiative rests with the agriculturists, whose special care it should be that the home meat trade is not manipulated to their own disadvantage.

### POULTRY FARMING.—No. 4.

THE next subject to be considered for the keeping and breeding of poultry on a large scale is the distribution of the stock over the ground and its housing. Both of these points are of the utmost importance, for if the former be neglected the birds will infallibly have epidemics from tainted soil, if the latter from vitiated air. However large be the area over which the stock is spread it must be separated. All experience proves that fowls will not thrive if congregated together in large numbers, and unless proper barriers are made it is impossible to keep different flocks apart. When they are young and during the summer months, especially if there be plenty of wood and the various houses are not visible from each other, different lots will live separately and keep to themselves each in the house allotted to them, and over the ground about it; but directly the leaves fall and autumn weather arrives they become gregarious and all huddle into one or two abodes, probably those nearest the habitation of their attendant. In the day, too, they seek about in immense flocks and taint particular pieces of land. For this reason they must be duly separated. Of course, some amateurs may have so many broad acres of park or forest land that each lot of their fowls can be placed at really considerable distance from all others. Even then there is danger of their getting together in winter, for they will then follow the sound of crowing long distances. We are not, however, now writing for rich amateurs, but for those whose object is profit from their birds, and with whom economy of time and trouble is a point, for much time is taken up in travelling round to distant pens.

To begin with, we should divide the ground into runs of about

an acre; these should be divided with fences 6 feet high, and closed at least 2 feet from the ground. This is requisite for two reasons—firstly, because through a wire or lattice fence cocks, and sometimes even hens, will fight and injure themselves and others; and secondly, because birds are much more contented if they cannot see beyond their runs. If confined merely by open wire-work so that they can see tempting surroundings, more especially if they can see their neighbours more free than themselves, they continually tramp up and down in a way which reminds us of the Polar bear in the Regent's Park.

There are various ways in which the fencing may be made. We have seen it of wattle hurdles 8 feet high, the poles between them being 6 feet high, to which light wire-netting was attached above the hurdling. We do not consider this at all a satisfactory barrier; for to begin with, the wattles must be double, apart at the bottom, and leaning against each other towards the top, or they will be useless for preventing fights, and, moreover, they very soon wear out. Where there is every chance of the runs being long required we should make the divisions of rough deal 2 or 3 feet high, and the upper part of light wire netting at about 4d. a yard, 3 feet wide. Where, however, there is any intention of moving the divisions frequently we would make them of 6 feet wire, fastened to fir poles at from 6 to 8 feet apart, and tie against the lower 2 feet of the wire heath, rushes, straw, or coarse sacking. Such a fence may even serve as a permanent one if a laurel hedge be thickly planted on each side and well trimmed as it grows. In three or four years it will become a sufficiently close barrier as the temporary screen wears out. We have seen in a French book minute instructions for making a permanent living fence which we will translate:—"The partitions should be 2 yards high. To construct them in this way get some freshly pruned boughs of poplar, willow, or any other tree which grows from slips. Mark out the runs by making trenches 9 inches deep wherein to plant the bottom of the fence, and in these dig holes at all the angles of the yards at least 18 inches deep for the corner stakes, which should be 2½ yards high—i.e., 2 yards out of the ground and 18 inches in it. These corner stakes should be cut from the stoutest branches, and should be at least the size of an arm. At intervals of a yard all along the trenches holes must be made to receive somewhat slighter stakes. To begin with, put in the corner stakes and ram down the earth round them, then with the poles of the middle and smaller size make a trellis. This when the trenches have been filled-up with earth, and when some horizontal bands of water willows have been again twisted in it, becomes quite impenetrable. About four of these cross bands are required to make it quite firm. If all the wood have been planted fresh cut it breaks out in spring time, and forms an imperishable fence which ever becomes thicker. It should then be clipped every year, as it grows too tall or straggling. To ensure success all must be planted very freshly cut and before it hardens. Perhaps the best time for it is the month of March." We do not pretend to have tried this kind of fence, but the directions for making it sound practical, and we can fancy that in many places it might be constructed at a small cost. In whatever way the runs be divided out we should make them as we have said, of about an acre each. The number of fowls that may be allotted to each depends upon circumstances, such as their age and size, into which question we will go under the heading of "General Management."

The next point to be considered is the housing of the birds. For the number which we shall advise to be kept in each enclosure a house will suffice 12 feet long by 8 feet wide, with a span roof, the ridge 10 feet high, the eaves 6 feet. We do not attempt to give minute directions for the construction of houses, for we have not even had them made with strict regard to economy, which is of course necessary where profit is the aim of the establishment. Much must depend on the locality and the materials there cheapest. Of course if any of the runs are bounded by a wall on one side expense is saved by making the house lean-to, in which case they might well be narrower and proportionately longer. Where peaty soil abounds huts may be cheaply made of it; they should have an opening to the south never closed, for the ordinary methods of ventilation are not easy. Ventilation should be the first care in the construction of houses. The perches should be low, and at a level above them on all sides of the houses save the north should run ventilators of wire netting near to the eaves. So much harm is done by foul air that were we ourselves about to attempt keeping poultry in large numbers we should be inclined to have sheds for roosting instead of houses—i.e., houses with three sides, but entirely open towards the south; at any rate, all through the summer we should have the doors left open all night. For roofing we prefer thatch as warmest in winter and coolest in summer; it may be well made with heath in lieu of straw where it abounds. In addition to the roosting house there should in every run be a smaller rough shed, such as will afford a dusty dry piece of ground all the year round and shelter during storms; for fowls always seem to have an objection to taking refuge in their roosting houses, probably because the floors are generally harder and more level than they like, and the retreat is too dark. In a concluding article we

hope to give our idea as to the breeds most suited for the various requirements of a large establishment, and as to general management.—C.

### VARIETIES.

ALTHOUGH a vast quantity of hay and fodder have been wholly ruined by the late drenching rains, yet a valuable residue was comparatively uninjured when the brighter days set in, and much has since been secured. The ground, however, being cold and wet the grass, &c., withers slowly, and the work of haymaking even now the rain has ceased is somewhat tedious and expensive. The meadows, too, have been considerably weakened in consequence of the cutting having been so long deferred, as nothing is so exhaustive to plants of all kinds, including the grasses, as the strain they sustain by the formation and ripening of seeds, and more than the usual dressings of manures and fertilisers will probably be necessary for maintaining the meadows in what farmers term good heart and condition.

— WE have received the prize list of the Hemel Hempstead Poultry and Pigeon Show (October 1st and 2nd) together with the rules and regulations for the incubator tournament, the chief prize being a gold medal value ten guineas. Entries for the poultry show close on September 13th, and for the incubator contest on August 23rd. Rules, &c., can be obtained from the Rev. Herbert R. Peel, Abbot's Hill, Hemel Hempstead.

— ANOTHER new weather theory has been promulgated. An observer who has closely studied the weather for twenty-seven years states that there are successive triennial periods of dry and wet weather. The summers of 1871, 1872, and 1873 are pointed out as wet; 1874, 1875, and 1876 as dry; and 1877, 1878, and 1879 as wet again, so that the next dry period is due in 1880. What may be termed the antipodean theory—(namely, that the character of the seasons at the antipodes is reproduced in England in the summers succeeding) has utterly broken down; for while last summer in New Zealand was one of the hottest and driest on record, this summer in England is the wettest and coldest that has been known for many years.

### BRITISH BEE-KEEPERS' ASSOCIATION'S ANNUAL EXHIBITION AT SOUTH KENSINGTON.

#### SECOND NOTICE.

To those who are looking forward hopefully to the day when the moveable-comb principle may be generally adopted by the cottager, Class 3 is much more interesting than that last commented upon, since here, instead of finding costly hives as much beyond the comprehension as the pocket of the labouring classes, the price is limited to 10s. 6d., including cover, floor board, and facilities for storing surplus honey, while the exhibitor must be prepared to guarantee to supply any number of hives like to exhibit and at the price affixed. The Judges awarded first to Messrs. Green & Son for the "Cottagers' Myrtle Hive." This carries sectional supers, and the adapter is both good in arrangement and make. Mr. R. Steele took second honours. Here the sections can be placed laterally. Mr. Holland stood third with a hive both good and cheap; as was also that of Mr. C. T. Abbott, highly commended, while his brother's, though well supered, is too small. Mr. B. McGregor shows a doubled-walled hive with capital weather-boarded super cover. The workmanship and materials are alike good; and without the paint, of which three coats at least seem to have been given, would be a marvel of cheapness. Bearing in mind the guarantee previously referred to we should have placed this hive in the prize list. Mr. Lyon in this class showed a hive worthy of attention bearing this inscription—"Cheap bar-framed hive for cottagers' use, made with no tools but a pocket knife and hammer. Honey may be taken from the frames farthest from the entrance, or supers may be worked on the top, the roof being deep enough for them. Cost: one lobster box, 4d.; one milk box, 3d.; sheet iron, 30 inches by 24 inches, 6d.; 5 feet pine for frames, 5d.; total, 1s. 6d." The frames, twelve in number, are placed in the lobster box (which is 18 inches long, 12 inches wide, and 9 inches deep) with their ears extended over its upper edge; the milk box is inverted over these to hold the sections or supers, should such be used; the iron sheet goes over all to keep weather-tight. The boxes aforesaid are seasoned and very strongly made, and would be good after use and exposure that would reduce many of the so-called cheap hives of some makers to utter wreck. The hint can only be taken advantage of by those who have some little mechanical tact, but to such it is, we think, of great value.

Class 4, for best straw hive for depriving purposes, cost not to exceed 5s. Messrs. G. Neighbour deservedly won with a good tightly-made skep, having two holes in crown, upon which is placed a crate of sections, itself having a new and neat method of fixing its boxes. Upon the hive three slats are fastened; between two of these and against the third the crate is slidden, when it stands in correct position over the holes in the hive crown. The common skeps shown by Mr. Griffin are beautifully made and very cheap.

Class 5 (supers) contained no novelty worthy of remark, while almost all are but feeble copies of American patterns; and in the crates, although dummies were shown by some, nothing worthy of comparison with parallel wedges appeared. Messrs. Steele, Baldwin, and Neighbour stood first, second, and third; Mr. Holland highly commended.

Class 6 (Ligurians) were only a good average, Mr. Abbott and Messrs. Neighbour & Son, first and second, were the only exhibitors. Class 7 (foreign bees, not Italian), Messrs. Neighbour first and Mr. J. P. Jackson second, with Cyprian bees, by far the most noteworthy in the Exhibition. They are of good size and wonderfully handsome, the yellow being bright and solid. The mesanotum and metanotum are respectively partially and completely yellow, as are also four of the abdominal rings; legs dark jetty black, pubescence light and sharply defined, with the abdomen yellow beneath. We are informed by the exhibitor that these bees are of extremely mild temper. Class 8 (pure English bees), three exhibits; first Messrs. Neighbour, second Mr. S. Baldwin. A patient search with a hand magnifier was not rewarded by finding a single pure black bee in the collection. The advantage of this class is not very apparent. The English honey classes, eleven in number, now invite attention; but unhappily the catalogue contained many entries, which made in hope had been abandoned in despair, and vacancies upon the tables were rather the rule than the exception. Results surprising for the season in a few cases were shown, Mr. S. Thorne taking first with 40 lbs. from one stock, and coming also to the front with sections of good quality and regular surface. The Italian honey exhibited was bad in colour and indifferently shown.

One side of the quadrant devoted to the Exhibition was in large part occupied by the collection of apicultural appliances of Messrs. Abbott first, Neighbour second, and Rusbridge, the last being also least in quantity but admirable in workmanship. In extractors, Class 24, Mr. Cowan, first, shows a very ingenious improvement, which automatically reverses the combs after one side has been cleared of honey. This is one of the bright ideas of the season which marks a step in the development of the extractor, and will soon appear, we think, in some of the big apiaries across the ocean. Messrs. Everett of Ohio, U.S., came second with a very highly decorated machine, and Mr. Cowan third (he has always been strong in extractors) with a crank rod movement extremely simple and effective. In Class 25, for the finest sample of pure beeswax, we think it unfortunate that a prize should have fallen to specimens publicly known not to have been produced by the exhibitors' own bees. Does not the letter of the schedule here require emendation? In Class 26, for any new invention calculated in the opinion of the Judges to advance the culture of bees, two commendations only were given, one to the copper bottle for heating supers, which we regard on more grounds than one as worse than useless, and the other to Mr. Cowan's ventilating frame for wintering bees, which, however good, is too scientifically conceived to commend itself to the average bee-keeper. Mr. J. Hunter, jun., exhibited alone in Class 27, but deservedly was awarded silver medal for his ninety microscopic slides illustrating the anatomy of the honey bee.

In the display of British bee flora Miss Ellen Rorke took first prize with a neatly exhibited collection of dried blooms, all excellently displayed; Mr. R. B. Godfrey stood second, closely pressing the winner; Mr. Wheeler third with a good collection in a fresh state.

Class 30, for the best smoker, Mr. R. Steele won with novices; but we think Messrs. Neighbours' and Mr. A. J. King's exhibits were both greatly its superior. In Class 32 Mr. F. Cheshire was awarded silver medal for a beautiful series of large drawings, having an area of 150 feet, which he had executed mostly under the microscope; Mr. R. B. Godfrey commended.

The members of the Committee gave instruction in the bee tent during the manipulations; while Mr. Newman of Chicago, Editor of the American "Bee-keepers' Magazine," and who is now in England as a delegated representative of the Bee Associations of America, addressed a good gathering on the aspects of bee culture among our transatlantic cousins. Bishop Tozer presided in the absence of the Baroness Burdett Coutts at the annual general meeting, and threw out some good suggestions in reference to the distribution of cheap tracts amongst the poorer villagers where bees are or might be kept. Upon this point, and the means for assisting the producer in disposing of his honey, an animated and friendly discussion followed. On Thursday the Countess Brownlow distributed with much grace and generosity the prizes in medals, certificates, and money, all of which had been either duly engraved, written, or packeted by the hour appointed. The proceedings were terminated by an enthusiastic vote of thanks to the most excellent Hon. Sec., Rev. H. R. Peel, and to the Baroness for her kindness in presiding.

### SWARMING VERSUS NON-SWARMING.

THERE can be no doubt that to permit a moderate amount of swarming is good management for bees. In my own case I always like to get one good swarm per annum out of each of my

hives; and of late years, being generally at home at swarming time, I prefer to let them go off in the natural way. I consider a natural swarm one of the special interests and delights of spring time, which I would not forego on any account. Moreover, Nature is the best guide where she can have her way in her own proper time, and it has been often observed that there is a greater spirit and diligence among bees after swarming than at any other time. Nevertheless, there are many persons who keep bees at a great disadvantage owing to necessary absence from home, or such fulness of occupation as must needs prevent them from watching their bees with sufficient closeness of attention. Hence they lose many swarms every year, and fail to obtain the honey harvests which they might reasonably expect, great disappointment being oftentimes the only harvest which they do reap. Therefore it is a perpetually recurring question, "How may such persons best manage their bees so as to risk the least possible loss of swarms and to gain the utmost harvest of honey?"

There seems but one of two things to choose for this end—namely, either to prevent swarming altogether so far as is possible, or to make the bees swarm by artificial means at suitable times, limiting the swarms to one from each pair of hives. The latter can usually be done even in the case of straw skeps by driving a swarm out of any strong stock and putting it at once in the other stock's place. If this be done under favourable circumstances (including fulness of population and suitable weather) but few bees will be left in the old stock. When denuded of its population to the utmost the old stock should be made to take the place of another strong stock at a time of day when most of the bees are abroad, which latter must be shifted to a new stand as far off as may be. It is evident that the driven stock will have to raise a new queen, and in the course of a fortnight there will be a probability of a second swarm. As soon as strong piping is heard by two or three of the young queens this too should be driven and put in place of the parent stock after getting rid, as in the former case, of the entire adult population. This twice-driven hive, with its stock of young queens in various stages of development, of which there are sure to be several left, is now in a position to be utilised with good effect. For repeating the process above detailed it will be in a most favourable condition to receive the outlying or home-streaming population of any other strong stock which may be shifted from its place, supposing there to be more hives in the apiary out of which swarms are to be driven as before described. It is true there is a chance of a cast issuing when the young queens come to maturity; but the probabilities are against it, because in this case the bees will have been in too disturbed a state to be very watchful over the first young queen that issues from her cell, who will in nine cases out of ten "polish off" her rivals before she is interfered with. Any intelligent bee-keeper who carefully studies the foregoing instructions will be in a position to manage his apiary with the least possible risk of losing his swarms. When swarms are thus made let them be placed in roomy hives, and ekes and supers given *ad libitum*, with free and easy access from the stock in each case to both super and eke. Then the bee-keeper can go about his business without undue anxiety.

In the case of bar-framed hives the thing is still easier. All that is required is to take out the queen on some convenient day with one or more bar-frames of brood comb, putting them into a new similar hive, which is also to be placed where the old stock stood, removing this to another stance. Here the parent hive alone is disturbed. Of course as before a "cast" must be expected, but it will reduce the chance of such issue to a minimum if the frames be examined in due time after strong piping has been heard, and all royal cells be cut away, leaving but one closed or fully matured cell as a guard against accident. After removing the full combs of brood let empty bar-frames be substituted in their place with workers' guide comb or wax-comb foundation attached.

To prevent swarming altogether is perhaps an impossibility. In years like the present, or in ordinary rainy seasons, bees will swarm even from partially filled hives, so that the risk of losing a swarm must always remain in the category of chances; still it can be reduced to the least possible point, and in many years the use of proper precautions will generally succeed in averting swarming. There is of course one treatment which may be expected absolutely to succeed in preventing the issue of a swarm other than that which may be called a "hunger swarm." It is simply to examine a hive week by week, and to cut out every royal cell which may happen to contain royal brood. This, however, cannot always be done, nor without serious inconvenience in cases where supers have been set upon a hive, although up to such time this suggestion should not be neglected; it will therefore be advisable to adopt other methods to baffle the bees' instinct. Such methods will include the supply of abundant room as soon as the great honey harvest is commencing—1, by means of nadirs, ekes, and supers, or by lateral expansion of the hive; 2, by removing frames and supers when full of honey, and substituting other empty ones as fast as required.

But besides these obvious methods with which every practised bee-keeper is familiar, I would suggest a third as follows, which

has well answered in our apiary. It combines both methods just described. Before royal cells are set, or if set after extracting them all, transfer to large supers three or four alternate frames of brood, replacing them with frames containing guide-comb or full-sized foundation comb. Similar combs can also be placed in the supers. The honey stored in the transferred combs after the brood has been hatched out will be as good as any for extraction by the slinger, otherwise these combs may be used for the strengthening of the parent stock at the close of the season by replacement, or of any other which may require food. By this means not only will the increased space in the parent stock, and the stimulus given to fresh comb-making within the hive, divert the bees' attention from queen-rearing, but the certain occupation of the super by a large detachment of workers will both relieve the overcrowd below and induce the bees to take immediate and permanent possession of the super, all which circumstances will certainly tend greatly to postpone *sine die* any idea the bees may have formed of swarming. The process obviously enough can be repeated with a little variation more than once in the course of the summer.—B. & W.

## OUR LETTER BOX.

TALKING PARROTS (*P. Clutterbuck*).—Grey Parrots of both sexes talk freely. One of the best talking birds we ever heard was a hen, the sex of which we can vouch for from the fact of it having laid many eggs during captivity. The bird belonged to the proprietor of a china warehouse in the midland counties.

APIARY.—1, From the centre of one bar to the centre of the next should be  $\frac{1}{4}$  inch in the stock hive. It is usual to allow a trifle more, say from a  $\frac{1}{2}$ -inch to  $\frac{3}{4}$ -inch in the supers; but bees are very capricious in the distance they adopt in supers. 2, By all means cut away all empty drone-comb in transferring bees and comb from a straw hive. There will be added quite enough of this by the bees in filling in vacancies. 3, The "black bees" are found in many hives, and are not distinct in kind. They are probably old bees, which have escaped the perils of many a forage and have worn away their hairs. 4, Mignonette and borage might bloom before late autumn closes and yield some feed, but we doubt the utility of sowing it so late as this. Nor indeed do we, not being market gardeners or seed growers, trouble ourselves to supply pabulum for our bees, which cannot be supplied by amateurs in sufficient quantities to pay. 5, There is no objection to the perforated zinc as used ordinarily when feeding.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1879.	July.	Baromet. at 30 in. and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Air at 5 feet.	Shade Tem- perature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.		On grass.
We. 23		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Th. 24		30.021	57.1	54.3	N.W.	56.6	69.3	53.4	112.5	49.6	
Fri. 25		30.054	61.3	58.3	S.	57.1	74.3	50.9	129.0	48.6	
Sat. 26		30.121	59.2	55.0	S.W.	58.0	70.6	50.2	108.6	45.7	
Sun 27		30.097	55.7	54.2	W.	57.7	65.4	50.8	91.6	43.3	
Mo. 28		30.050	61.8	56.3	N.W.	57.2	70.8	49.8	122.0	46.8	
Tu. 29		30.103	64.0	60.8	W.	58.3	75.7	55.3	118.0	52.2	
		30.111	65.4	63.0	W.S.W.	58.7	78.5	56.4	124.7	56.4	
Means		30.075	60.6	57.4		57.8	72.2	52.3	115.2	49.4	

## REMARKS.

23rd.—Cloudy, very dull morning; fine warm afternoon with bright sunshine; fine starlight night.  
24th.—Rain in night, dull damp morning, afterwards fine summer day; starlight night.  
25th.—Fair but overcast day, little sunshine at intervals; fine night.  
26th.—Rain in morning, ceased by 9 A.M., but the day continued overcast; finer in evening.  
27th.—Fine day, not very much sunshine; slight rain between 9 and 10 P.M.; starlight at 11 P.M.  
28th.—Fine day but at times very stormy-looking; clear beautiful evening.  
29th.—Very misty close morning; fine bright summer day, quite warm; clear fine evening.

At last we have something like summer weather, although even now it has not reached 80° in the shade; and although it has been the driest week since that ending January 28th., the nights are very damp.—G. J. SYMONS.

## COVENT GARDEN MARKET.—JULY 30.

TRADE for best forced goods is now very stagnant, the demand having passed away owing to the London season being over. Bush fruit is reaching us in fair quantities, prices being lower.

## FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	sieve	0	0to0	Melons.....	each	3	0to5	0
Apricots.....	dozen	2	0	8	Nectarines ..	dozen	3	0	8
Cherries.....	box	2	0	8	Oranges .....	100	4	0	18
Chestnuts.....	bushel	12	0	16	Peaches .....	dozen	3	0	12
Currants.....	1	sieve	0	0	Pears, kitchen..	dozen	0	0	0
Black .....	1	sieve	5	0	dessert.....	dozen	0	0	0
Figs .....	dozen	3	0	9	Pine Apples ...	1	lb	3	0
Filberts.....	1	lb	0	9	Plums .....	1	sieve	0	0
Cobs .....	1	lb	0	9	Raspberries ...	1	lb	0	0
Gooseberries...	1	sieve	2	3	Strawberries ..	1	lb	0	6
Grapes, hothouse	1	lb	1	6	Walnuts .....	bushel	1	0	0
Lemons .....	100	4	0	8	ditto .....	100	0	0	0

## WEEKLY CALENDAR.

Day of Month	Day of Week	AUGUST 7-13, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.			
7	TH	Southport Summer Exhibition.	74.8	50.9	62.7	4	34	7	37	9	0	10	39	19	5	319
8	F		74.5	49.4	61.9	4	36	7	35	9	17	11	50	20	5	320
9	S		74.9	49.6	62.2	4	37	7	33	9	39	1	0	31	5	321
10	SUN	9 SUNDAY AFTER TRINITY.	75.1	51.9	63.5	4	39	7	32	10	7	3	8	6	5	322
11	M	[mittices at 11 A.M. Carnation and Picotee Show.	75.8	50.7	63.2	4	40	7	30	10	43	3	13	23	5	323
12	TC	Royal Horticultural Society—Fruit and Floral Com-	75.1	50.5	62.8	4	42	7	28	11	31	4	11	24	4	324
13	W	Ramsgate Horticultural Exhibition.	74.6	50.0	62.3	4	43	7	26	morn.		5	0	25	4	325

From observations taken near London during forty-three years, the average day temperature of the week is 74.9°; and its night temperature 50.4°.

## CULTURE OF ALLAMANDAS.

**T**HESE plants are flowering exceptionally well considering the sunless season, although the growths are somewhat longer than usual before the flowers appear. If the stove temperature had been kept to its average height through the two or three months past, with scarcely any air, the growth would have been long and weak, with no substance to produce first-rate flowers. However, these conditions having been modified to suit the season, plants generally are doing well. While they endure a large amount of sunshine, they are much benefited when in flower by a slight shade during the hottest part of the day.

Allamandas are not only ornamental but useful for a variety of purposes, either grown as climbers up the roof of a stove, or for the decoration of the conservatory during the latter part of the summer. For the purposes named the plants produce a fine effect when well grown, and to accomplish this end they should be treated liberally. These plants are of strong growth and delight in heat and moisture, especially if the blooming period is to last over a long space of time. Allamandas are capable of producing flowers of large size and substance for eight months out of the twelve; they are easy to grow, and do not require so long a season of rest as many people suppose, and give them. Seven or eight weeks' rest is sufficient for them from the time water is first withheld. Neither is bottom heat necessary in any stage. They succeed well either in pots or planted out. We would recommend large pots in preference to planting-out, as water can then be given and withheld at will, and the soil partially removed and renewed at the proper season.

Propagation is effected by means of cuttings from the young shoots taken off close to the wood of the previous year; they should be inserted in small pots singly and placed in a Melon house, and must be shaded from the sun. They are not particular as to soil in this early stage. We employ light turfy loam with a dash of sand in the centre of the pot for the base of the cuttings to rest on. They neither need bellglasses nor propagating frames, and are in no way particular about bottom heat. We may here say that the lovely species *A. grandiflora* is best managed by being grafted on any of the stronger species, such as *Schottii* or *Wardleyana*. In grafting it is important that the wood be ripe, both of the stock and the spray that is to be employed for the scion. They can be inarched similarly to Vines by placing the two portions of the young wood together. We consider the first-named system to be the best. In performing the operation, supposing the stock is in a 3 or 4-inch pot it should be shortened well back to within 3 or 4 inches of the soil; any of the ordinary modes of grafting employed for Roses, young fruit trees, &c., will answer well. The piece employed for the scion should contain two or three buds, and after carefully fitting the two together they must be made secure with worsted, where the union is to take place and be then well rubbed

over with clay or grafting wax. This being done they must be placed in the propagating frame, where they can be carefully attended to until growth has commenced and the union is complete. When root-action is becoming vigorous they should be transferred into larger pots. This species grows much slower than any of the others, but its flowers are produced very freely.

*Allamanda nobilis*, *A. Schottii*, and the old *A. cathartica* are all worth growing where a collection is the object. *A. grandiflora* and *A. Wardleyana* are the two most worthy of a place of any with which we are acquainted. We should certainly recommend that beautiful hybrid of Mr. Wardley's, which is named after him *Wardleyana*, and very frequently seen under the name of "*Hendersonii*." It will produce nearly double the number of flowers that *A. Schottii* will; the flowers are as large or larger in size with as much substance, and the brown markings are more prominent in the throat or tube than in its parent *Schottii*, while it possesses the light markings of its other parent *cathartica*. The treatment that applies to one species or variety will suit the others equally well, except *grandiflora*, which requires more careful cultivation. *Allamanda Wardleyana* is our favourite; it needs no special care in propagating, except that it is best attended to as early in the season as possible. This is important, and the young plants must be grown on rapidly. We might here say that the *Allamanda* can be grown too strongly and robustly the first or second season; if this is the case the cultivator may not save time. To guard against this the wood must have light, sunshine, and air when developing its growth rapidly to solidify the wood. Another important item is that very firm potting is required. This is not quite so necessary in the very earliest stages, but the last potting in the first season should be firm; the plant will then rest, and when cut back and again started in January or February it will grow freely. On the other hand, if not firm and ripe when pruned it often dies back.

The young plants when well rooted in 3-inch pots must be transferred into 6-inch pots, using this time loam, sand, a seventh of manure, and a little leaf soil, which will assist them to start freely into growth. After this potting the compost we find most suitable is rich fibry loam, a seventh of manure, and sufficient coarse sand to make the whole porous. The young plants will extend rapidly, and can be shifted into 12-inch pots the first season. The system above is the best when the cuttings are struck late; if rooted early, as advised, the leading shoot when about 1 foot in length should have the point taken out and two shoots allowed to grow instead of one. No better place to train them can be found than under the roof of a stove, in an upright position. By the end of the season the two shoots will be strong; they should be well ripened and receive a good rest. Our mode of resting is to withhold water when the wood is ripe until the foliage flags. Very little water is given afterwards, only sufficient to keep the wood plump.

Whether intended to be trained and employed as a stove climber or for exhibition, or both, the growths must be removed from the roof a short time before the plants are

required for exhibition and be placed upon a trellis. The cultivator in pruning must be guided by the condition of the wood and the distance the shoots can be laid to the right and left of the pot. If thoroughly matured a yard on each side can be left. The ball of the plant if very dry should be partially shaken out and steeped in tepid water. After being thoroughly soaked and the water well drained from the soil the plant can be placed in a pot either the same size or larger, the latter will be the best, using the compost recommended, and the soil must be rammed firmly into the pot.

Allamandas can be potted as soon as pruned back, but we prefer leaving them a time to rest after the final pruning. No attempt is made to wait until the plant breaks into growth before the operation is carried out. We have tried both plans and find little or no difference. Very little water is needed at the root until root-action and leaf growth have well commenced. If the wood at the pruning time was well ripened bloom will be produced when the young shoots are about 18 inches in length. The second season a good quantity of bloom will be produced. The plants will continue branching and flowering until late in the season, when rest to a large extent has to be forced on them. With two batches of plants, one started early and the other late, Allamanda blooms may be had all the year.

If desirable to extend the plant two shoots, one on either side should again be left at pruning time a yard or more long and trained horizontally as before, the other shoots should be pruned back to one or two eyes like Vines on the spur system. Plants can in this way be extended until they fill the whole side of a house. The syringe is sometimes necessary if the small yellow thrips makes its appearance in the points of the shoots, which if allowed to remain soon does much damage. Nothing is better than the syringe to keep down this insect, it does not like water. With plenty of moisture in the atmosphere and the plants growing rapidly there is little fear of its attacks. In our mode of treatment the syringe is seldom used—never after the first flowers make their appearance.

The Allamanda while growing requires liberal applications of water, and is much benefited with liquid manure when the pots are full of roots. It is something wonderful what a large amount of growth the plants can support with limited root room, provided they are liberally supplied with water and their wants attended to in other respects.

We strongly condemn that constant growing and non-pruning system that we occasionally meet with. Under this weakening and exhausting system what size and substance have the flowers? and in what quantity are they produced in comparison with those that rest and produce their large flowers of great substance in due season?—WM. BARDNEY.

[We have seen the plants grown by Mr. Bardney, and never saw any blooming more freely nor producing finer flowers.—EDS.]

#### VINES—FERMENTING MATERIALS.

THE winter of 1878 and 1879 will long be remembered by gardeners practising early forcing. Prolonged cold sunless weather through spring to the present time seriously retarded forcing operations. Vines started in November did not break until January, or else grew very tardily and weakly. There are those who surmise that a severe winter is certain to be followed by hot weather and bountiful harvests of fruit and grain; but this is not a rule, and we find that the would-be weatherwise folks are silent if the results are contrary to the predictions, for we have evidence that a severe winter may be followed by a cold sunless spring and summer.

Some insist that fermenting materials are of no value on outside borders, as the heat generated does not pass downwards but upwards, and is of no use in warming the soil. If any evidence were needed to controvert these statements we can have none stronger than that afforded by the roots of the Vines, as in removing the fermenting material the roots will be found growing actively in it, thus showing that they have been attracted upwards. Those who advocate the non-covering of Vine borders with fermenting material foresee no frost, cold rains, and snow, which affect the roots so injuriously in unprotected borders. Stored-up sap in thoroughly ripened wood will sustain growth until the roots are in action, but how are they to be active in a border at a temperature of 40° whilst the branches are in a mean temperature of 65° to 70°? Roots, it would appear, are of no consequence. Only afford heat and moisture to the branches, the eyes will swell, the leaves unfold,

the bunches develop, the set will be good, the swelling free, and the finish perfect! It may be as well to state that no growth takes place in the Vine at a lower mean temperature than 50°, at which after a good rest both roots and head become active, so that in mild winters a covering of some dry protective material if applied before the border is drenched with rain is sufficient to retain heat at a temperature exceeding 50°. We may safely conclude that activity of buds and roots is simultaneous.

We may insert a Vine cutting or eye in moist soil, and if it be placed in bottom heat with the atmosphere too cold for leaf-development yet roots will be emitted; or coil a piece of Vine stem in a pot, and simultaneously with leaf-growth roots will be emitted if both soil and air are the same temperature. The stored-up sap in thoroughly ripened wood supports both leaf and root growth. It is the same in all cases whether of the herbaceous plant, bulb, or ligneous plant—thoroughly ripened growth is the foundation of vigorous growth. In lifting Vines that have been planted a number of years the roots are often found to be fibreless and unhealthy, but if they are replanted nearer the surface in fresh compost they will start freely, and by the stimulation of fermenting materials placed on the border the Vines become furnished with active roots in such quantity as to sustain a vigorous growth. Keep a Strawberry plant dry at the roots when at rest, and it will not force nearly so well as one kept cool and moist. A Peach border kept dry in winter will cause the trees to cast the buds, and a Vine border allowed to become dry will assuredly destroy every young root. The tender rootlets also perish in a cold wet border, and the break in either case is irregular—the growth slow and weak, especially if the roots are in a cold outside border and are not stimulated into activity by warmth from some source. I do not insist on bottom heat being necessary for Vines, but I do submit that in the early forcing of any plant it is a highly advantageous aid, inasmuch as it induces root-action proportionate to the leaf-growth. I can well remember when Vines, as a rule, were grown with the roots exclusively in outside borders, not one Vine in a hundred being planted inside. There were Vines in almost every pinery, the Vines being started in a minimum temperature of 60° to 65°, the borders in every instance being thickly protected with litter. It was common in those days to have Vines trained to the roof of a house with the roots outside and Peach trees beneath the Vines in the house, the latter having the roots inside, and not unfrequently Fig trees were planted against the back wall. It is only fair to state that good useful fruit was so grown, and many plants as well. Bottom heat was employed then as now for most plants required early, though Pines were said to be grown successfully by Mills without bottom heat, which appears to have been only transitory, as no one would think of growing Pines without bottom heat of some kind any more than they would have thought of starting Vines in January without first placing on the border a good thickness of fermenting materials. Next came the fancy for inside borders with arched front walls to allow the roots to pass into the outside border, the Vines being planted inside; and in this case it is notorious that the roots are more plentiful in the outer than the inner border; they choose the cold and wet preferably to the warm and dry—remarkable fact. The fact is, inside borders serve no practical end unless kept thoroughly moist, especially when the Vines are in free growth and in search of moisture, the roots pass through the arches. The case is similar to the rods of Vines deep in outside borders, the insufficient supply of water near the surface causing them to descend in quest of it.

It may further be urged that chambered borders with hot-water pipes for affording bottom heat prove conclusively by their failure that applying heat to the roots of Vines is injurious. I admit they have few advocates and fewer adopters; indeed I know of more than one instance where the heat is not employed with results much more satisfactory than when the borders were kept warmed by the hot-water-pipes, yet in no instance were the borders protected on the surface so as to prevent the chill resulting from cold rains, snow, and frost, nor was tepid water employed to maintain due moisture. Absurd as it may appear such was the practice, worse ten times than only affording a covering of protective material at the surface against frost. I only know one border heated by pipes underneath where the Vines succeed; the Vines being planted inside, that as well as the outside border being chambered and heated by hot-water pipes, the outside border having about 6 inches of long litter placed over it in October, and renewed in



December, the inside border being well supplied with water and liquid manure alternately as may be required. Results may be diverse when the same means are employed, only there are two ways of employing them—viz., right and wrong.

Pot Vines were recently raised and grown in bottom heat, now the practice is almost if not quite abandoned, quite as strong and equally well ripened canes being obtained without it; but I do not admit this as evidence of the futility of covering outside borders of early vineries, for the roots then enjoy the same temperature as the canes, and the activity of both is equal, but I consider no one would be so bold as to force Vines in pots with the latter plunged outside and the canes introduced through holes in the wall, affording the canes a summer temperature whilst the roots are amidst the cold and wet of winter. Mr. Rivers adopts a more rational plan and places the pots on the hot-water pipes, and all growers wishing for good results would at least have the pots inside the house, and if practicable start the plants in heat afforded by fermenting materials. The roots like to run in decomposing matter which contains plenty of food in a form that the roots can readily absorb and the foliage assimilate. Those advocating the non-covering of Vine borders with a thick covering of protective or fermenting materials, will be unable to tell us that this season's experience has proved the soundness of their views and practice.—G. ABBEY.

### OLD-FASHIONED FLOWERS.

YES! we have actually fashions in our gardens, and very tyrannical, expensive, and monotonous some of them are. Carpet bedding, for instance, is in fashion now, and I cannot but regret that so much space is given up to it and plants of the ordinary bedding type in gardens. Let me be consistent and acknowledge having frequently written in favour of the bedding-out system, and warmly defended it too; nor am I about to decry it, but rather to ask that it be kept within due bounds, and that a fair proportion of space be reserved specially for those old favourites of our boyhood that have come to be known under the designation of "old-fashioned flowers" by those garden radicals who can see no beauty apart from what the Premier has termed "hard and scentless mutations of art." "Flower gardens," writes the same authority, "should be sweet and luxuriant. Give me Cabbage Roses, Sweet Peas, and Wallflowers, bushes of Honeysuckle, and bowers of Sweet Peas and Sweet Briar, and Jasmine clustering over walls; Gillyflowers, banks of Violets, Mignonette, Roses, and Carnations, the Lily, the Heliotrope, and the Stock."

It cannot be denied that expression is here given to a general feeling that such flowers should be found in every garden; nor in order to have them need we discard our charming beds of spring flowers, so soft-tinted and fresh, or the fuller riper beauty of the more brilliant summer flowers. No plant or bed of a few brief weeks' duration, however beautiful it may be, can ever rank in our esteem with the favourite of years, the sturdy old perennial that has grown to be as dear to us as an old friend.

Most of us cultivate too many plants, collection rather than selection is our aim; but then the difficulty is to know which to choose where all are beautiful. "My husband always has twice as many plants as he has room for," said a friend to me not long ago. "Ah, ah!" laughed the culprit, "I never can refuse a good thing, and you know we like at any rate to keep up with our neighbours." A very common, but nevertheless mistaken, notion is this of keeping abreast of our neighbours by cramming our garden with twice as many plants as it is capable of well containing. Much more praiseworthy is the spirit of rivalry when devoted to the culture of a few really choice plants, and much greater the pleasure they afford than a crowded assemblage of starvelings, however choice they may be.

Often have your readers been advised to devote a border specially to old-fashioned flowers. I for one must plead guilty to having done so, yet now I must acknowledge that long formal borders are in themselves objectionable. Beautiful plants are the only thing attractive about them; why, therefore, cannot we group our plants in the thousand and one nooks, corners, and beds that may be contrived for them? How charming the effect, how pleasant the surprise, of an extraordinary fine specimen of some familiar old favourite meeting the eye unexpectedly in some secluded nook, or challenging observation boldly upon some prominent slope or open position among shrubs!

To enumerate a long list is not the object of this paper, yet I may mention a few old favourites that ought to be cultivated by everybody and as a sort of nucleus to which might be added many choice varieties of Phlox, Pyrethrum, Pentstemon, Pæonia, and Carnations. Of those which occur to me as being as familiar as a garden itself there are Daphne Cneorum, Solomon's Seal, Dielytra spectabilis, Fuchsia Riccartoni, Andromeda Catesbaei, Gentiana acaulis, Arundo conspicua, Pampas Grass, Stipa pennata, Briza maxima, Loosestrife in two or three varieties, Spiraea japonica, S. palmata, Gunnera scabra, Bocconia cordata, Yucca recurva, Y. gloriosa, Acanthus latifolius, old China Monthly Rose, Cabbage Rose, common Moss Rose, Gloire de Dijon Rose, Erica carnea, E. mediterranea, Rosemary, Lavender, and the old white Pink, so delicious in its perfume as to load the surrounding air with its sweetness. Let me add one regret. I used to grow magnificent specimens of Lavender from 1 to 2 yards in diameter, of a handsome globular form, in three or four years from the cuttings, in not very rich soil overlying masses of limestone; but among the ferruginous sandstone of Sussex it displays none of this desirable vigour or beauty of contour.—EDWARD LUCKHURST.

### FIG CULTURE.

SEVERAL years ago some remarks made by me on the summer pruning of Figs on open walls were considered worthy of admission into the Journal. Since that time the same culture has been successful, with the exception of this year, which may perhaps be attributed to the inclemency of the season.

The plan mentioned by Mr. Rivers (see "Orchard House," page 136, 15th edition), has been practised here some years. Bushes about 3 feet high are placed in October in the corner of a dark cellar, and removed in the beginning of May to a border in front of a wall. These usually produce a fair crop of fruit; but this year, in the case of bushes promising twenty Figs, there are not more than six on each, the severity of the weather after their removal to their summer stations having probably caused the dropping of fruit.—J. J. T., *Herts.*

### DWARF CAMPANULAS.

THERE are now in English and continental gardens a great number of species and varieties of Campanulas, which well merit their position and amply repay the cultivator for the very small degree of attention they demand. They are adapted for a great variety of uses—as ornamental border plants, as choice gems for the rockery, and in pots for the shelves or beds in conservatories. For these purposes we have species of very diverse habits, shrubby, semi-shrubby, herbaceous, and dwarf. To the latter we will now devote a few notes. These little plants are mostly attractive and graceful either in pots or on the rockery, for which some of them are specially adapted, and as many are in cultivation there is no difficulty in obtaining several distinct and pretty species with flowers that exhibit various tints of blue and purple fading to pure white. They are truly summer-flowering plants, and the majority are in perfection during June and July, but several prolong their period of beauty far into September. Of course, in the case of those cultivated in pots under glass it is easy to have them in bloom much earlier, and a succession may be maintained from April to September. We do not intend enumerating all the dwarf forms of Campanula, but only those that are most easily grown and are best fitted for the purposes mentioned.

The following is a selection:—*C. turbinata*, a native of the mountains of Transylvania, is a pretty tufted species from 6 to 9 inches in height, bearing numerous fine, open, bell-shaped flowers. This plant and its varieties succeed well on the rockery or in a border of rich light loam. *C. carpatica*—this plant, as the specific name implies, is a native of the Carpathian Mountains, and is consequently perfectly hardy. It is valuable chiefly for two reasons, first that it is quite at home in any position—rockery, border, or pot, and requires but moderately light and rich soil; second, that it continues in bloom from June to September, yielding a quantity of bright blue flowers. It generally reaches about 9 inches in height, is compact in habit with heart-shaped leaves. *C. garganica*, a pretty little plant found in Istria and Monte Gargano. It is well adapted for an elevated position on a rockery, where it would be free from any stagnant moisture; it may also be grown in pots, but the surface of the soil should be slightly raised above the rim of the pot. The lower leaves are roundish, but the upper are

heart-shaped; the flowers are a delightfully fresh blue with a white centre, and they are borne in loose racemes. *C. g. hirsuta* differs from the species in its foliage being more hairy. *C. alpina*, a native of the Swiss Alps, is of erect growth, about 8 inches in height, with lanceolate leaves. The flowers are of a beautiful dark blue, pretty bell-shape, and they are borne in pyramidal racemes. This plant does well on the rockery, but not in shady or damp borders. *C. rotundifolia* is small and well suited for pot culture, and continues in bloom a considerable time. This scarcely needs description, for the Scottish Bluebell must be well known to many readers of the Journal. There is a white variety which is very pretty. *C. muralis*, diminutive and of prostrate habit, native of South Europe. The leaves are cordate, with a dentate margin; the flowers are of a pale violet-blue tint and very numerous. This species is well suited for growing in a pot or on the rockery. *C. rupestris* is somewhat similar, but the leaves are larger and the plant is more tufted in habit, the flowers being pale blue and expanded. *C. pulla*, an Austrian species, is an extremely pretty plant. The leaves are oval and glabrous, and the bell-shaped flowers of a fine purple colour. This is one of the most attractive plants for the rockery, where it continues in flower during the greater portion of summer.

The majority of the species enumerated are herbaceous perennials, and can be readily increased either by cuttings, division, or seeds; but the biennials, such as *C. garganica*, produce seed freely, and by that means are most easily propagated.—L. CASTLE.

### THE CROPS IN THE SANDY DISTRICT, BEDFORDSHIRE.

THE results of the late cool and dripping weather will prove serious in many respects to market gardeners in this locality, and in many cases it has been impossible to get the land clean. Cucumbers, after having been in some instances sown three times, have been mostly ploughed up, and only in sheltered places with a good autumn sun will a crop be obtained. Great doubts are entertained whether any Onion seed can be harvested, as the heads have scarcely yet expanded. The crop of Onions is a good one, but thick necks largely prevail, as also with picklers, and both have a tendency to rot.

Early Potatoes are being fast secured, and in most instances in good condition and average crops, but disease has shown itself in the tops, which have died-off, leaving the tubers apparently prematurely ripened-off and sound. Late Potatoes look promising. Scarlet Runner Beans are looking well and have withstood the wet remarkably well. This season they will be in advance of the Dwarf French Beans, which are only just recovering from a very starved appearance. Peas where thick are in some instances rotting on the ground, and it has been impossible to gather them green. Should, however, warm dry weather quickly come there will probably be a fair harvest of seed of the early sorts. The late varieties have, however, dropped their flowers a good deal. Turnip seed has set badly and the yield will be inferior. Much of the hay crop in the valleys of the Ouse and the Ivel has been under water, and is spoiled. Oats, and especially Barley, on the cold lands look bad indeed, and Wheat in some cases is very thin although flaggy. Altogether there is a very desponding feeling, and gloom surrounds both the spade and the plough.—T. LAXTON.

### SLUGS AND SNAILS.

WHAT is the best mode of destroying slugs, snails, and their eggs without damaging vegetation? One would have thought that last winter would have killed all of them, but they are livelier, stronger, bigger, and more numerous than ever. They are fairly eating up my garden, as Zulus would do a patch of mealies, or as I have seen locusts do a crop in Syria. They have completely cleared off three successive (but most unsuccessful) sowings of French Beans and Scarlet Runners. They have gobbled up several Cucumbers and Vegetable Marrows entirely. Only last night they ate up the leaders of two Vegetable Marrows as thick as walking sticks, and have just taken a fancy to a bed of very choice Delphiniums, for the seed of which I paid a fancy price. I have tried paraffin oil and water, McDougall's disinfectant powder, and nitrate of soda. The last is the most effectual of the remedies. If it touches the bodies of snails or slugs it soon kills them, but it also kills or damages the plants; for instance, if a Cauliflower

or Cabbage receives a speck of the soda it is not palatable if cooked, nor can Lettuces be eaten if they have been in contact with it. I gave my manure heap a good dressing of quicklime last winter, thinking it would kill them and their eggs, but they actually seemed as grateful for it as poor cottagers would have been for a load of coals, for it only "warned" them without any vital inconvenience; indeed the tonic seemed to strengthen them rather than otherwise.

Seriously speaking, can any of your readers from experience tell me what will destroy snails, slugs, and their eggs? I believe that in my own case the manure heap has been the nursery. If this is correct, what is the proper thing to mix in the heap, which is composed of vegetable refuse and the contents of an earth closet? Has anyone tried nitrate of soda mixed in the manure heap (14s. per cwt. makes it rather costly), gas lime, quicklime mixed with salt or with soot, and in what proportions? If successful I have an idea that gas lime would probably be most efficacious, but it is so powerful in its action that I fear to use it without knowing more than I do what proportions of it to use to a manure heap or to put on the open ground.—G. O. S.

### SOUTHAMPTON SUMMER SHOW.

AUGUST 2ND AND 4TH.

ON Saturday last the Royal Southampton Horticultural Society held their seventeenth annual Exhibition in Westwood Park, an extensive and beautiful estate situated on an eminence north of the town, a position that was admirably adapted to the purpose. The exhibits were generally excellent, and this was particularly noticeable in the groups and collections of plants which constituted the great features of the Show. Very numerous classes were provided, and the prizes offered were in the majority of instances sufficiently high in value to produce a close and vigorous competition. In two of the classes for collections of plants exhibited by nurserymen and gardeners respectively four prizes were offered, which varied in value from £10 to £2. In the other classes there was every gradation from £6 to 8s. The exhibits were arranged in six large tents placed parallel with each other, which appeared to be somewhat inconvenient and occasioned rather unpleasant crowding at one period of the day. We think the tents are preferably placed in a line. A numerous and aristocratic company assembled during the afternoon of the opening day, and were favoured with fine weather, without which a flower show succeeds but poorly.

GROUPS.—We have already noticed that the groups and collections of plants were unusually numerous and good, and we will now mention the most prominent exhibits, commencing with the former. For a group of miscellaneous plants to occupy a space of 12 feet by 10 feet five prizes were offered, the first prize of £6 being presented by the Mayor and Corporation of the town. Six competitors entered the field, and their methods of arrangement were sufficiently good to cause the Judges a little difficulty in one or two cases. A quadrangular form was adopted, and the turf was raised round the edge of each group to conceal the outer rows of pots. The Mayor's prize was easily obtained by Messrs. Jackson and Son, Kingston-on-Thames, who had a light and graceful arrangement. A large *Dicksonia antarctica* formed the centre, and was surrounded with Palms, Dracenas, Ericas, and Statice, the margin consisting of small *Dracophyllum*, *Kalosanthes*, *Adiantum gracillimum*, and *Aira cæspitosa*: the whole was extremely tasteful. The next position in order of merit was allotted to Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett. This group was somewhat too flat with a high edge, and the surface was not broken enough, but it was otherwise bright and pretty. A *Musa* formed the centre, and around this were plants of *Lilium auratum*, *Dracenas*, *Crotons*, *Celosias*, *Pelargoniums*, and Palms, *Tuberous Begonias* being placed at each of the angles. Mr. W. Browning, gardener to F. Holloway, Esq., followed with a rather formal arrangement but attractive, the edging being very pretty, composed of *Lobelias*, *Isolepis*, and *Gloxinias*. The two remaining prizes were secured by Mr. J. Kingale, Bevois Valley, and Messrs. Oakley and Watling in the order named, with groups of only ordinary merit.

Some remarkably handsome specimens were shown in the classes for collections of miscellaneous plants. In the nurserymen's class for eighteen plants, not less than five to be in flower, Messrs. Jackson & Son again carried off the honours with a collection that was greatly superior to the others. It included an excellent *Kalosanthes* over 8 feet in diameter, with abundance of unusually bright flowers; a fine *Cocos Weddelliana* 6 feet high, graceful and healthy; *Allamanda Hendersonii* and *A. nobilis* well grown and flowered, and *Dipladenia amabilis*, bearing richly coloured flowers in profusion. Messrs. Oakley were second, and Mr. J. Kingsbury third with small but good plants.

In the corresponding class for gardeners the first prize was most justly awarded to Mr. E. Wills for as neat and beautiful a collection of plants as could be seen. One handsome specimen

of *Alocasia Lowii* was especially noticeable for its vigorous finely coloured foliage; the plant was over 5 feet in height. *Alocasia metallica* was another fine specimen nearly 5 feet in diameter, the peculiar metallic hue of the foliage being in perfection. *Dieffenbachia Bowmannii* was in superb condition, and also a large specimen of *Clerodendron Balfourianum* over 6 feet high, evenly trained and flowering profusely. Mr. N. Blandford, gardener to Mrs. Haselfoot, Moor's Hill, was placed second with a collection of neat and even plants, which included a *Cyanophyllum magnificum*, *Adiantum pedatum*, and *Dendrobium nobile*. Mr. W. Browning secured the third prize with fair specimens.

Ferns were exhibited in good form, particularly in the class for six stove or greenhouse species or varieties. Mr. E. Wills obtained the premier award for handsome vigorous specimens of *Adiantum cuneatum*, a superb *A. gracillimum* nearly 8 feet in diameter, *A. farleyense*, and *Davallia Mooreana* excellent. Mr. T. Avery, gardener to H. McCalmont, Esq., Highfields, followed with large specimens, *Davallia Mooreana* being enormous, about 4 feet high and 7 feet in diameter; *Adiantum cardiochilense* and *Lomaria zamiaefolia* were also good. Mr. Avery was first with six hardy Ferns, all *Athyriums*, in excellent health. Mr. E. Wills and Messrs. Jackson & Son followed, there being in all five competitors. Mr. E. Wills secured the chief prize for *Selaginellas*, and his specimen of *S. cecilia* possessed its beautiful glaucous tint in perfection. Numerous other plants were well represented, which we cannot describe in detail—as, for instance, *Tuberous Begonias*, *Fuchsias*, *Celosias*, &c.

Cut flowers were not very abundant, but table decorations were well exhibited, and were sufficiently numerous to require a tent to themselves. In the class for twenty-four cut Roses Messrs. Keynes & Co., Salisbury, gained the chief prize with extremely fine blooms of the best varieties. The following were noticeable for their substance and good colour: *Madame Marie Bady*, *Horace Vernet*, *Marie Baumann*, and *Reynolds Hole*. Mr. Edward Hillier, Winchester, was second with only medium blooms. Mr. Charles Turner of Slough sent twelve boxes of superb cut Roses that were highly creditable to the exhibitor.

**FRUIT.**—This was exhibited in fair condition generally, but the Grapes were indifferent. In the class for eight dishes of fruit Mr. W. F. Simpson, gardener to W. Baring, Esq., Norman Court, Dean, was placed first with well-ripened Black Hamburg Grapes, good Peaches and Nectarines, and fair Currants, Gooseberries, and Strawberries. Mr. Jones, gardener to Lady Barker Mill, Mottisfont Abbey, secured the second prize with a collection that was inferior to the last only in the Grapes. Mr. E. King, gardener to Lady M. Charteris, Efford Park, Lymington, was third with rather small and imperfectly ripened fruit. The only other exhibit worthy of notice was the two bunches of Muscat of Alexandria from Mr. J. Allen, gardener to J. Bailey, Esq., Elmsfield, which were the best white Grapes in the Show, and although the bunches were small the berries were superbly ripened and coloured; the first prize was awarded.

Vegetables were abundant and well grown, and the principal prizes were awarded to Mr. W. Simpson; Mr. W. Sanders, gardener to J. East, Esq., Lymington; and Mr. H. Vickery. The cottagers' productions were more numerous than usual, and as many as 150 competitors entered the lists. The small fruits and vegetables were excellent, and the Potatoes were all that could be desired.

## BRITISH PLANTS.—No. 2.

(Continued from page 463, vol. xxxvi.)

### MARSH PLANTS.

HAVING on page 463 referred to water plants and alpine plants of interest to the botanical collector, I submit the following as worthy of attention and cultivation:—

*Lythrum Salicaria*.—This very showy plant may often be seen from the windows of a train, for it is so conspicuous with spikes of purple blossom rising often 4 feet high or more by some ditch-side, and it is also often found by the sides of ditches lining the country roads of a stiff clayey district, moisture being its principal requirement. It is easily found, as it is met with almost everywhere in August.

*Parnassia palustris*.—This plant, contrary to the last-named one, requires seeking after and is not so easily found, as it is of lower growth, and often grows amongst the rank plants of a marsh, its pretty blossoms never reaching so high as the blades of grass by which it is surrounded. It is, however, well worth looking after in such places. The blossom resembles those of some of the *Ranunculuses*, and its classical name, *Grass of Parnassus*, is not the least of its charms. It is more plentiful in Lancashire and other northern counties than in the south, where artificial drainage has obliterated it.

*Narthecium ossifragum* (the Lancashire Asphodel) is also found in situations like the last, presenting a little neat spike of yellow flowers pretty and interesting.

*Drosera rotundifolia*.—This seems to be confined to peaty

marshes, whereas those previously given are all met with where peat does not abound. The *Drosera* or Sundew was associated a few years ago with the class of carnivorous plants, and the fact of the tips of its hair-like glands being always furnished with a drop of matter like dew has for many ages given it a place amongst interesting plants. It is not by any means plentiful, and its sites are not perhaps so plentiful in the south of England as in Scotland. It is, however, well worth seeking, as other interesting plants will often be found in the same neighbourhood, not the least so being *Hydrocotyle vulgaris*.

*Comarum palustre*.—This also is found on peaty bogs, where its flowers, resembling a *Geum*, are not remarkable only for their abundance, and it is more widely spread than some of the above. It is, however, far inferior in beauty to the following.

*Menyanthes trifoliata* (Buckbean or Marsh Trefoil).—This is amongst the most beautiful of all our British plants, and is found in wet boggy places mostly of a peaty nature. I have seen it in a wet pasture where cattle fed, but I do not think they meddled with it much, as it is a strong bitter, and has been, I believe, used in the Highlands of Scotland, Hooker says, as a substitute for Hops, and also medicinally; but it is on account of its beauty that I wish to call attention to it here. Its blossom is produced in clusters, are beautifully fringed and exceedingly pretty. I do not think any attempts have been made to introduce it into gardens, most likely on account of the difficulty of giving it a suitable site, as it likes water.

*Myosotis palustris*.—Popular as the garden forms of this plant really are. I do not know any variety which exceeds either in size or beauty a good specimen of the species when met with growing in a ditch into which perhaps some of the sewage of a farmyard has found its way. Such places are here and there met with, and where this plant is thus found luxuriating its beauty far exceeds that of its brethren in dry poor soils of the flower beds.

### PLANTS OF UNCERTAIN HABITATS.

*Pinguicula vulgaris*.—This plant, which a few years ago was with some others brought prominently before the public as being possessed of carnivorous properties, is also of great beauty and interest, and it is for these reasons that I now mention it. Dwarf-growing and compact, it looks as if it could easily be transplanted. I have not met with it in a wild state for many years, but I recollect finding it in the greatest abundance on a piece of what might be called the worst land in existence. It was near the margin of a large pond, and, in fact, the place where it was growing had been a part of the same pond itself; all the good soil had been removed and nothing but clay left, but the water being drained off Nature attempted in her usual way to clothe the surface with vegetation with small patches of a coarse stubby grass. These in time increased in size, so that the ground consisting of several acres was scattered all over with thin patches of coarse grass standing a little above the ordinary level of the clay base; but around the edges of these hillocks, which often did not exceed in size more than good spade-fuls, were scores of plants of this Butterwort, growing on the sloping sides of these little mounds, but so plentiful that it would have been an easy matter to have filled a wheelbarrow or even a cart in a short time with them. It is certainly a mistake to suppose that peat is required in its cultivation, as nothing could be more unlike peat than the clay in which it was growing, but it is certainly a pretty and interesting plant.

*Pyrola rotundifolia* is remarkable for its pretty green foliage, green even in winter, but I expect only under shade; in fact I always find it growing in shady places, and never more plentifully than under the shade of a Scotch Fir plantation on a stiff clayey soil. I think I have been told that *Linnaea borealis* is also found in such situations.

*Cypripedium Calceolus*.—This is, perhaps, the rarest of all British plants, and I have never found it wild anywhere; and, in fact, I know only of one locality where it grows wild, and that, perhaps, it would not be prudent to mention. It is, however, an exceedingly pretty plant, equalling any of the exotic Orchids that I am acquainted with, and highly deserving of cultivation.

This list might be extended to an indefinite length, but it is needless to do so here, further than to say that some of our wild Orchises are as much deserving of study as exotic species are of cultivation, and perhaps there is nothing more interest-

ing at our horticultural exhibitions than a collection of wild plants in flower and correctly named.—J. ROBSON.

### LIVERPOOL HORTICULTURAL ASSOCIATION'S SHOW.—AUGUST 2ND AND 4TH.

JOURNEYING from London to Liverpool *via* the Midland system through Derbyshire, one of the most picturesque districts in England is traversed, and arriving at Sefton Park, one of the most beautiful public parks in the provinces is reached. In this park was held the first Show of the above Association, which far exceeded in magnitude and quality any shows which have been held in Liverpool during recent years; indeed it is questionable if an exhibition in all respects so meritorious has ever been arranged in the vicinity of the first town in the kingdom and the first port in the world as the Show in question. It was, in fact, one of the finest provincial shows of the year. The Manchester Whiteout Show was pre-eminent for Orchids and Roses in pots and Rhododendrons, the York and Leeds Exhibitions for Pelargoniums, and the Newcastle gathering for table decorations, all of which features were absent at Liverpool, yet there were compensating advantages such as, thanks especially to Messrs. Cranston and Prince, also to Messrs. James Dickson & Sons and Francis and Arthur Dickson & Sons of Chester; Alexander Dickson & Son, Belfast; and Dickson & Robinson, Manchester; and others for the great display of cut Roses, while the fruit on the whole was equal if not superior to any exhibition of the kind that has been seen this season. Plants also were as good as could be produced at the period of the year, as will be readily admitted when it is stated that such famed cultivators as Messrs. Cypher, Cauldwell, Hammond, Tudgey, and Cole put forth their strength for the honours in the chief class. The nurserymen's collections too, as will be seen below, were extensive and excellent; and local growers exhibited admirably in the various classes.

The schedule was arranged in two sections, twenty-four classes being "open to all England," the remaining thirty-nine classes being for local exhibitors. The prizes were generally good, at least sufficiently so to ensure entries in every class, and in nearly every case the products entered were staged. Of two important exceptions one was a melancholy one, and the other unfortunate. Mr. Miles, Wycombe Abbey, was unable to compete in the fruit and vegetable classes on account of the death of Lady Carington, and Mr. Cole, Withington, in the principal plant classes on account of a "smash" at the Liverpool station that rendered his plants unfit for exhibition. Some of the Judges of the Show inspected Mr. Cole's plants at the station, and sympathised with the owner on the loss and disappointment he had sustained by the untimely mishap, for had the plants been staged in good condition they would have won prominent positions in the prize list.

The Exhibition was arranged in four marquees "new for the occasion," belonging to Mr. Howard of Liverpool. No. 1 was a grand tent 200 feet long by 45 wide. The principal specimen plants were arranged down the centre, no stage being employed nor needed, as the specimens were sufficiently large to furnish the large space devoted to them. Narrow tables along the sides of the tent accommodated the boxes of Roses and other cut flowers, table plants, new plants, &c., and the effect produced was very imposing. Another tent 100 feet by 45 contained the nurserymen's collections; a round tent plants in the minor local class, and a similar erection the fruits and vegetables. All the marquees were quite filled, some of them, indeed, being overcrowded. In referring to the exhibits we will first notice the

**PLANTS.**—In the open class for twelve stove and greenhouse plants, six foliage and six flowering, four collections were staged; the fifth, Mr. Cole's, being *hors de combat* at the station. Mr. Cole was utilised as a Judge, the number of Judges originally appointed being quite inadequate to get through a Show so large in an hour and a half, the time at their disposal. The prizes in the premier class in question went in the following order:—First Mr. Cypher, Cheltenham; second Messrs. Cauldwell & Sons, Knutsford; and third Mr. Hammond, gardener to Sir Wilfrid Lawson, Bart., Brayton Manor, Carlisle; Mr. Tudgey for once being "out of it." Mr. Cypher's foliage plants were a fine *Pritchardia pacifica*, with leaves 8 to 4 feet in diameter; *Thrinax elegans*, 12 to 14 feet high; *Cycas Normanbyana*, with a stem of 8 feet and a spread of leaves of 7 to 8 feet, a grand plant; *Lantana borbonica*, large, fresh, and fine; *Croton majesticus*, a well finished and brilliantly coloured specimen 4 feet in diameter; and a superior example of *Gleichenia Mendelli*, 4½ feet across and in superb condition. His flowering plants were *Ixora amabilis*, 8 feet, densely flowered; *Dipladenia Brearleyana*, of the same size, with two dozen flowers; large examples of *Allamandas nobilis* and *Hendersoni*, *Clerodendron Balfourianum*, a globe 5 feet in diameter; and a small but well-flowered specimen of *Erica venosa*—a very fine collection. Messrs. Cauldwell's best plants were *Areca Baueri*, wonderful for its colour and massiveness; *Gleichenia rupestris*, a fine specimen 5 feet in diameter; and good examples of *Cocos Weddelliana*, *Cycas revoluta*, *Croton variegatus*, *Allamanda Hendersoni*, *Bougainvillea glabra*, and *Erica Iveryana*. Mr. Hammond, who was a close

third, staged amongst others a splendid *Cocos Weddelliana*, *Croton majesticus*, 4 feet in diameter and richly coloured; a huge *Croton Veitchii*, a very fresh *Dracophyllum gracile*, *Rondeletia speciosa major* (bright), *Ixora javanica* and *Hendersoni*, *Dasylium glaucum*, and *Erica tricolor flammea*. Mr. Tudgey exhibited good foliage plants, but was deficient in flowering specimens, which he had evidently reserved for the next class for six plants in flower, where he easily won the first position with *Ixora amboynensis*, 8 feet, well furnished and flowered; *Phenocoma prolifera Barnesi*, 2½ feet, very fresh and good; *Anthurium Schertzerianum*, with fine spathes and foliage; *Statisia profusa*, and *Ericas Fairreana* and *Williamsi*. Messrs. Cauldwell were placed second.

In the open class for eight fine-foliaged plants Mr. Hammond secured first honours with an immense specimen of *Cycas revoluta* in fruit, a large *Croton angustifolius*, *Acanthorrhiza Warcewiczii*, fine; *Maranta Veitchii*, *Chamserops humilis tomentosa*, *Dicksonia antarctica*, and good examples of *Crotons majesticus* and *C. Weismanni*. Messrs. Cauldwell & Sons were an excellent second; *Areca Verschaffeltii* 10 feet high was in splendid colour, and very fine indeed were *Thrinax elegans*, *Cocos Weddelliana*, *Cycas intermedia*, *Davallia Mooreana*, *Gleichenia dichotoma*, with *Crotons pictus* and *variegatus*.

In the open class for six new *Dracaenas* Mr. B. S. Williams, Upper Holloway, London, secured the premier position with fine healthy plants about 8 feet high of *Robinsoniana*, *Duffii*, *Goldsiana*, *Leopoldi*, *Bansei*, and *superba*, all in fine health and colour. Mr. Hammond was second, and Messrs. Kerr & Son, Aigburth Nurseries, Liverpool, a very close third. For six new *Crotons* Mr. Williams was also first with healthy examples 8 to 4 feet high of *Burtoni*, *Williamsi*, *fasciatus*, *Henryanus*, *albicans*, and *concinnum*. Mr. Hammond was second with *nobilis*, *Evansianus*, *Queen Victoria*, *Etna*, *Disraeli*, and *Rex*.

In the open class for eight exotic Ferns Mr. Peers, gardener to R. Rayner, Esq., Wavertree, was first with an excellent collection comprising *Cibotium princeps*, *Dicksonia antarctica*, *Davallia polyantha* and *D. Mooreana*, both 6 feet in diameter, *Goniophlebium appendiculatum*, *Gymnogramma chrysophylla*, and *Gleichenia speluncæ*. Mr. Hammond was second also with a fine collection. In the corresponding class for twelve hardy Ferns, distinct, first Mr. C. Rylance, Ormskirk, with good plants of *Adiantum Capillus-Veneris*, *Lastrea Filix-mas grandiceps*, *Lastrea F.-m. cristata*, *Polystichum angulare proliferum*, *Adiantum pedatum*, *Osmunda regalis cristata*, *Athyrium Filix-femina Craigi*, *Lastrea F.-m. cristata angustata*, *Athyrium Fieldiae*, *Polystichum aculeatum cristatum*, *Scolopendrium vulgare crispum*. Mr. F. Faulkner, gardener to F. R. Leyland, Esq., Woolton Hall, was placed second with the following plants:—*Lastrea F.-m. grandiceps*, *Athyrium F.-f. Simmonsi*, *Athyrium F.-f. Fieldiae*, *Scolopendrium vulgare variabilis*, *Athyrium F.-f. Craigi*, *Osmunda cristata*, *Athyrium F.-f. Pearsoni*, *Osmunda gracilis*, *Athyrium F.-f. plumosa*, *Polystichum aculeatum plumosum*, *Lastrea F.-m. cristata*, *Lastrea F.-m. Bolandæ*. Third, Mr. J. Gore, Elmfield, Princes Park, Liverpool, whose plants were very good, and contained three seedling *Athyriums* beautifully crested and distinct; one of these, *A. F.-f. Holderianum*, was granted a first-class certificate, and is a great acquisition to this class of hardy Ferns.

Only three collections of *Ericas* were staged, and the plants were not of great excellence. The smallest and best were Messrs. Cauldwell's first-prize quartet—quarter-specimens of *Eximes superba*, *McNabiana*, *No Plus Ultra*, and *semula*. Mr. Tudgey was second with larger but thinner plants. Had Mr. Cole been able to have staged his plants, which we saw, he would probably have been first in this class as unquestionably he would have been in the class for the best specimen Orchid with a splendid example of *Miltonia spectabilis* with forty flowers, many of the spikes having two flowers. The prize, however, was well won by Mr. Sherwin, gardener to Morton Sparke, Esq., Huyton, with *Aërides suavisimum* with five drooping spikes; Mr. Cypher being second with *Dendrobium superbiens*, a richly coloured variety. Mr. Sherwin also won the chief prize in the class for four Orchids with *Dia grandiflora*, four spikes, nine flowers; *Cattleya guttata Leopoldi*; *C. crispata*, three spikes, twenty flowers; and *Oncidium Wentworthianum*. Mr. Cypher was second with *Oncidium Marshallianum*, very bright; *Saccolabium Dayanum*, very long drooping spikes; *S. Blumei*, and *Cypripedium barbatum*.

In the open class for eight table plants (the prizes given by Messrs. Ireland & Thomson, Edinburgh), there were eleven entries. The plants being arranged in a single line behind the Rose boxes imparted an agreeable finish to that part of the Show. Mr. Ward, gardener to T. H. Oakes, Esq., Biddings House, West Derby, secured the first prize with *Pandanus Veitchii*, *Aralia elegantissima*, *A. Veitchii*, *Croton majesticus*, *Cocos Weddelliana*, *Dracaena Guiffoylei*, *Terminalia elegans*, and *Croton Weismanni*; Mr. Hammond was second. The plants were about a foot in height, elegant and healthy. The great number of small and meritorious plants staged in this excellent class suggest that classes for groups of plants arranged for effect would be well responded to, as there are necessarily many good plant cultivators who are unable to compete in the specimen-plant class and yet who ought not to be

"left out in the cold." In the open class for six Zonal Pelargoniums Mr. C. Rylance secured the premier prize with extremely neat well-flowered examples about 2 feet in diameter; Mr. Whitefield, gardener to J. T. Cross, Esq., Beechwood, Aigburth, being second.

We now refer to the plants exhibited in the local classes, several of which were of great excellence and not excelled by any in the preceding section of the Show. In the class for eight plants, four foliage and four flowering, Mr. Mease, gardener to C. W. Neumann, Esq., Wyncote, Allerton, secured the first position with a collection which we have seldom seen surpassed at any exhibition. They comprised *Croton variegatus* 8 feet in diameter and in splendid colour; *C. angustifolius* of equal size, but wanting in colour; *Alocasia metallica* 6 to 7 feet across, in a 2-foot pan, magnificent; *A. macrorhiza variegata*, good; *Allamanda Hendersoni*, a superior specimen; *Ixora Prince of Orange*, small but good; a good specimen of *Begonia Vesuvius*, and *Plumbago capensis*. Mr. Blomley was an excellent second with *Cyanophyllum magnificum*, *Alocasia macrorhiza variegata*, and *Crotons Weismanni* and *undulatus* as foliage plants; the flowering specimens comprising *Kalosanthes coccinea*, fine; *Allamanda Schottii*, *Bouvardia Vreelandi*, and *Ixora coccinea*, all in admirable condition. Third honours were secured by Mr. M. Wood, gardener to W. Crossfield, Esq., Annesley, Aigburth, with a very meritorious group, *Anthurium regale* being 6 to 7 feet in diameter.

There were eight entries of six fine-foliage plants, the premier prize being awarded to Mr. Cubbon, gardener to Alison Johnson, Esq., Woolton Heys, whose collection included *Cycas revoluta*, very fine; a good *Dicksonia*, *Alocasia macrorhiza variegata*, effective; *Ananas sativa variegata*, good; *Alocasia Lowii*, and a fine example of *Croton Weismanni*. Mr. Peers was an excellent second, and Mr. Sherwin third. This was an admirable class, and some other collections were worthy of extra prizes and of honourable mention, but owing to what we hope is the last exhibition of showing under numbers at Liverpool, we are unable to record the names of many excellent exhibitors at the Show; and the faulty manner in which the prize cards were attached precluded our obtaining the names of several exhibitors who were awarded prizes.

The first prize for six exotic Ferns was won by Mr. Gore, gardener to T. Holden, Esq., Ullett Road, Liverpool, with *Cibotium regale* and *Dicksonia antarctica*, large; *Acrophorus cheiroporus*, very elegant; *Davallia bullata* 3½ feet across, close and healthy; *Pteris scaberula*, and *Davallia pyxidata*. Mr. Elliott, gardener to W. E. Bateson, Esq., New Heys, Allerton, was an excellent second with a large *Cyathea*, a splendid specimen of *Gymnogramma chrysophylla*, and good examples of *Balanium culcitum*, *Davallia Mooreana*, and *Adiantum farleyense* and *concinnum latum*. Mr. Ramsden, gardener to W. G. Bateson, Esq., Allerton, was awarded the third prize in this excellent class of six competitors. Mr. Sherwin won the first prize in the specimen Orchid class with *Saccolabium Blumei* major with five fine spikes. Mr. Elliott being an excellent second with *Aërides odorata virens* with six spikes but all the flowers not expanded. In the class for three plants Mr. Sherwin was successful with *Cattleya crispata* and *labiata* and *Odontoglossum Uro-Skinneri*. The display of Orchids was only a small one.

Some good Tree Ferns were exhibited by Mr. McMillan, gardener to D. O. Bateson, Esq.; Mr. Ramsden, gardener to W. Rathbone, Esq., M.P.; and Mr. Hurst, gardener to W. B. Bowring, Esq., Aigburth, who were awarded the prizes in the order named; and the prizes for single specimen Palms went to the two exhibitors first named and to Mr. Elliott. In the amateurs' class for six hardy Ferns, first Mr. R. Cubbon; second, Mr. Gore, Elmfield, Princes Park. Mr. Wright, gardener to E. Lawrence, Esq., Aigburth, was first in the class for Zonal Pelargoniums with even and good plants. Second, Mr. W. Evans, gardener to Mrs. Lockett, Grassendale House, with three pyramids and three low-trained plants.

Passing some minor classes we arrive at some good Tuberous Begonias exhibited by Messrs. Mease, Wright, and McMillan. Fuchsias were also good—the best we have seen this year; Messrs. Whitefield, Wright, Moore, and Hurst securing the prizes.

**MISCELLANEOUS PLANTS.**—The second tent above alluded to, 100 feet long by 40 wide, was entirely filled with nurserymen's collections. Upon entering the tent the plants from Messrs. F. & A. Dickson & Sons, The Upton Nurseries, Chester, first arrested attention, especially the beautiful collection of hardy shrubs in pots, which included *Cupressus macrocarpa variegata*, a remarkably fine shrub; *Thuja elegantissima*, *Retinospora pisifera aurea*, *Abies polita*, *Taxus fastigiata aurea*, *Juniperus chinensis aurea*, *Elaeagnus* of sorts, and many others very fine, which added materially to the attraction of the Show. The same firm had also a very large and varied collection of plants on the centre stage of the tent, including *Dracena Gleditsiei*, D. Shepherd, D. Baptisti, fine plants of *Aralia Veitchii gracillima*, *Adiantum rubellum* very good, and *Pteris scaberula*; also a fine plant of *Cycas revoluta*, various small Palms, new *Crotons*, *Coleus*, and Ferns. The arrangement was very effective, and the group was highly commended by the Association.

The remaining portion of the centre stage was filled with plants

from Mr. B. S. Williams of Holloway, also a portion of the side stage. This fine contribution included many new and rare plants. The *Nepenthes* and *Sarracenias* excited much attention. *Dracena Schottia*, *D. speciosa*, *D. Robinsoniana* and *D. Mrs. Bause* were exhibited in very fine condition, also *Lapageria alba*, *Renanthera coccinea*, *Oncidium fuscum*, *Odontoglossum hastilabium*, *Dendrobium superbiens*, *Odontoglossum Alexandrae*, *Cypripedium barbatum nigrum*, *Saccolabium Blumei*, and *Vallota oculata purpurea*, very distinct from the old form. This collection was highly commended.

The opposite side of the tent contained the two collections from Mr. J. Cowan, The Vineyard, Garston, and Messrs. R. P. Kerr and Sons, Aigburth, Liverpool, the former containing remarkable plants of *Aralia Veitchii*, *Alocasia macrorhiza variegata*, *Artocarpus Cannoni*, *Kalosanthes coccinea*, two good specimen plants and well-bloomed; new *Crotons*, *Dracenas*, Ferns, *Coleus*, Palms, *Eucharis* in flower, and, especially striking, two Vines in pots fruiting and trained round stakes, each Vine carrying six fine bunches, thus showing how well the pot Vines fruit as grown by Mr. Cowan. Vines in pots in other stages of development were very strong and good. This collection was also highly commended.

The last collection in this tent came from Messrs. R. P. Kerr and Sons, and was also very highly commended. They staged good plants of *Maranta Massangeana*, the old but fine *Dracena Regina*, a good plant of *Croton Mooreanus*, also a fine pot of *Nephrolepis davallioides furcata*, *Erica amula*, *Musa vittata*, *Croton Queen Victoria*, and fine plants of *Croton Lord Derby* and *C. Disraeli*, with other new *Dracenas*, *Crotons*, Ferns, &c. The arrangement was also effective and good. The same tent contained the curious and remarkable collection of Cacti from Mr. H. Boller, London. A few of the most striking were *Echinocactus myriostigma*, *E. Pfeifferi*, *Mammillaria formosa* and *filifera*, *Pilocereus senilis*, *Echeveria farinosa*, and a fine plant of *Agave Queen Victoria*.

A round tent contained the collections from Messrs. Ireland and Thompson, Craigleith, Edinburgh, and from Messrs. Turner Bros., Greenhill Nursery, Garston, Liverpool, the former lot occupying the centre of the tent as well as a portion of the side staging. This young and enterprising firm brought together a varied and excellent assortment of plants, including *Dracenas majestica*, *Robinsoniana*, *Mrs. Bause*, *recurva*, *Schottia*, and *Renardiae*; *Crotons Weismanni*, a fine pyramidal plant; also fine examples of *C. Queen Victoria* and *Lord Derby*. The old *Croton pictus* was in good condition; these were intermixed with Palms, *Caladiums*, and choice Ferns. The newest *Coleuses* included *Surprise*, *Distinction*, *Exquisite*, and *Fascination* were very good; also a quantity of the old *Blandfordia nobilis* in flower, associated with *Vallota purpurea*, *Kalosanthes*, and *Statice profusa*. We also noticed in this assortment a *Croton* of great promise named *interruptus aureus*, a cross between *Johannis* and *interruptus*. It was granted a first-class certificate, and is very distinct and promises to be an acquisition amongst table plants. This collection was also very highly commended. A first-class certificate was awarded to a new *Cypripedium* exhibited by Mr. Faulkner. It is the result of a cross between *C. barbatum* and *C. Harrisonianum*.

Messrs. Turner Bros.' collection also received a commendation from the Society. Their arrangement of small plants was very effective, and admirably suited for decorative purposes. The principal feature, however, were the wreaths and crosses made from everlasting flowers, and the bouquets exhibited by them and tastefully arranged amongst their collection of plants, in which branch (bouquet making) Messrs. Turner appear to excel.

**ROSES.**—Although the prizes were not large nor the classes numerous, yet owing to the great number of entries in consequence of the lateness of the season a very fine show was produced. In the open classes of forty-eight and twelve varieties the first, second, and third prizes respectively fell to Messrs. Cranston and Co., Hereford; Mr. Prince, Oxford; and Mr. Griffiths, Tillington Nursery, Hereford. Messrs. Cranston's blooms were generally the largest, Mr. Prince's smaller but very fresh and rich in colour. It was only by careful point-judging that the relative merits of the collections could be determined. In the twelve Mr. Prince was only seven points behind Mr. Cranston, and Mr. Griffiths two points in the rear of Mr. Prince. The finest blooms staged by Messrs. Cranston were *Comtesse d'Oxford*, *Beauty of Waltham*, *Mlle. Marie Rady*, *Duc de Wellington*, *Sultan of Zanzibar*, *Maréchal Vaillant*, "Dingee Conrad," in the way of *Fisher Holmes*; *Marie Baumann*, *Le Havre*, *Sénéateur Vaise* (the finest bloom in the Show), *Duc de Morny* (extra fine), *Prince Camille de Rohan*, and *Reynolds Hole*. Among the finest of Mr. Prince's blooms were *Baron A. de Rothschild* (very rich), *Duke of Edinburgh*, *Beauty of Waltham*, *Duc de Rohan*, *Louis Van Houtte*, *Le Havre*, *Lord Macaulay*, *Marie Baumann*, *Alfred Colomb*, *Horace Vernet*, *Princess Beatrice*, *Anna Ollivier*, and *Souvenir de Madame Pernet*. Mr. Griffiths had very fine examples of *Marie Baumann*, *Duke of Edinburgh*, *Madame C. Crapelet*, *Beauty of Waltham*, and *Sir Garnet Wolseley*. In the amateurs' class for twenty-four Roses there were ten entries, and the prizes fell to Mr. McMaster, gardener to W. Just, Esq.; Mr. Mease, and Mr. Savin; and for twelve blooms there were sixteen entries. The premier prize was won by Mr. Ecroide Claxton, Ash Villa, Wavertree, followed by



Messrs. McMaster and Hodgson; extra prizes being awarded to Messrs. Hall and Mease. The competition in some cases was extremely close, and the prizewinning boxes were very good, the best blooms being much the same as those above enumerated.

The miscellaneous exhibits of Roses contributed greatly to the success of this section of the Show. Messrs. Cranston sent twelve boxes of fine blooms, including a splendid stand of *Séateur Vaisse*; Mr. Prince nine boxes, including fine stands of *Beauty of Waltham* and *Marie Baumann*, also a charming box of Teas containing *Madame Lambert*, fine, rosy salmon, and excellent older varieties. Messrs. Wm. Paul & Son, Waltham Cross, exhibited stands of Countess of Rosebery and Duchess of Bedford in superb condition, which were much and deservedly admired; also *Pride of Waltham*, a promising Rose of the *Eugénie Verdier* type; *Masterpiece*, a fine bloom, somewhat resembling *Star of Waltham*; *Marchioness of Bute*, rich scarlet crimson; and *Lady Sheffield*, clear rose. In the stands of Messrs. James Dickson & Sons we noticed as especially fine *Capitaine Lamure*, *Marie Bady*, *Madame Berard*, *Royal Standard*, *Annie Wood*, and *Nardy Frères*. Messrs. F. & A. Dickson staged in superior condition *Abel Carrière*, very rich; *Madame Vidot*, fine; *Marie Baumann*, *Star of Waltham*, and *Duke of Edinburgh*. Mr. Alexander Dickson, Newtownards, Belfast, had *Comte de Rainbaud*, *Auguste Rivière*, *Charles Lefebvre*, *Madame G. Paul*, *Triomphe de Caen*, and *La France* in excellent condition; and Messrs. Dickson and Robinson, Old Millgate, Manchester, exhibited four stands containing many good blooms. Commendatory marks of approval were given to all the collections named.

**CUT FLOWERS AND BOUQUETS.**—The prize stands of eighteen varieties of stove and greenhouse flowers were excellent. Mr. Faulkner, gardener to J. R. Leyland, Esq., Woolton Hall, and Mr. Mease were placed equal firsts, Mr. Blomley second, and Mr. H. Elliott third. Mr. Faulkner's stand comprised *Allamanda Wardleyana*, *cathartica*, and *grandiflora*; *Tacsonia Van-Volkemi*, *Ixora coccinea*; *Lapageria rosea*; *Miltonia spectabilis*, *Eucharis*, *Heliotropes*, *Clerodendron fallax*, *Kalosanthes*, *Stephanotis*, *Bougainvilleas*, *Tydeas*, *Celosia aurea*, and *Ericas*. The most striking of Mr. Mease's flowers were *Lapageria alba*, *Pancratium*, *Amaryllis sulcata*, *Dipladenias*, *Gloxinias*, and *Pleroma elegans*. The best of Mr. Elliott's were *Francoa racemosa*, *American Tuberoses*, and *Lapagerias*. Bouquets were numerous and generally good, but one or two were fully too large and others too crowded. The prizes went as follows:—In the open class for two hand bouquets, first, Messrs. Turner Brothers, Greenhill Nursery, Garston; second, Mr. C. Rylance, Ormskirk; third, Mr. H. Bodsworth, Stone House, Allerton. In the amateurs' class, first, Mr. C. Colebrook, Dingle Head, Liverpool; second, Mr. S. Whitefield; third, Mr. A. R. Cox, gardener to Mr. Watts. For one bridal bouquet, first, Messrs. Turner Brothers; second, Mr. C. Rylance; and Mr. Evans highly commended. Mr. Paul, Paisley, contributed a fine display of Pinks and brilliant stands of Pansies, which were very highly commended by the Judges; and Messrs. Dickson and Robinson, Manchester, staged an attractive collection of hardy cut flowers which were also commended.

#### FRUIT.

As before observed this section of the Show was of great excellence. In the open class, eight dishes of fruit, not more than two varieties of Grapes, first Mr. W. Coleman, gardener to Earl Somers, Eastnor Castle, Ledbury, with *Black Hamburg* and *Muscat of Alexandria* Grapes (very fine), *Brown Turkey Figs* (very large), *Bellegarde Peaches*, *Victory of Bath Melon*, *Sir Joseph Paxton Strawberries*, and *Elruge Nectarines*. This collection of fruit was very superior, yet very close in point of merit was the second-prize collection of Mr. Jamieson, gardener to the Earl of Crawford, Haigh Hall, Wigan. *Duke of Buccleuch Grape* in this collection was well grown, the berries even and large, and perhaps this noble Grape has never been exhibited in finer condition. *Madresfield Court* was also very good; also two dishes of *Peaches* (*Bellegarde* and *Violette Hative*), *Pine Apple Nectarines*, *Brown Turkey Figs*, and a *Queen Pine*. Third Mr. J. Bannerman, gardener to Lord Bagot, Blithfield, with *Black Hamburg* and *Muscat of Alexandria* Grapes, *Brown Turkey Figs*, *Bellegarde Peaches*, *Trentham Hybrid Melon*, *Dr. Hogg Strawberries*, *Pitmaston Orange Nectarines*, and a *Pine*. In the corresponding amateurs' class for six dishes, not more than two varieties of Grapes, *Pines* excluded:—First Mr. Ferguson, with *Black Hamburg* and *Golden Champion Grapes* (the latter were in good condition), *Pitmaston Orange Nectarines*, *Duc de Malakoff Strawberries*, *Golden Perfection Melon*, and *Noblesse Peaches*. Second Mr. Elsworth, gardener to A. R. Gladstone, Esq., Court Hey, Liverpool, with *Trentham Hybrid Melon*, *Bellegarde Peaches* (very fine), *Figs*, *Pine Apple Nectarines*, and *Muscat of Alexandria* and *Black Hamburg* Grapes.

In the open class for two *Pine Apples*, first Mr. J. Goodacre, gardener to the Earl of Harrington, Elvaston, Derby; second, Mr. R. Cubbon, Woolton. In the corresponding amateurs' class, first Mr. F. Faulkner, Woolton Hall; second Mr. S. Whitefield, Aigburth.

For four bunches of Grapes (*Black Hamburg* and *Muscat of*

*Alexandria* excluded), first Mr. J. Ward, gardener to J. H. Oakes, Esq., Riddings House, with *Golden Champion* in good condition, *Foster's Seedling*, and *Muscat Hamburg*, the berries even and the bunch compact; and *Madresfield Court*. Second Mr. T. Bannerman with *Duke of Buccleuch*, very good; *Black Alicante*, Mrs. Pearson, very good, and *Madresfield Court*. Two bunches of *black Grapes* (open), first Mr. Ferguson, gardener to T. S. Patterson, Esq., Rock Ferry; second, Mr. Barker, gardener to Alderman Raynes, Rock Ferry; third, Mr. F. Roberts, gardener to W. D. Holt, Esq., West Derby. Amateurs' class (two bunches of *black Grapes*), first Mr. George Washington; second Mr. J. Hurst; third Mr. A. R. Cox. There were fourteen entries in this class, and excellent produce was staged. Two bunches of *Muscat of Alexandria* (open), first Mr. J. Bannerman, second Mr. Elsworth, third Mr. Ferguson, the bunches being well finished and of good colour. In the corresponding amateurs' class for *Muscats*, first Mr. Mease with two very fine bunches, the berries being of very large size; second Mr. Ferguson, Rock Ferry; third Mr. Elsworth. All staging admirable examples of culture.

**Peaches and Nectarines.**—In the open class for one dish of six fruits, first Mr. S. Whitefield with *Téton de Venus*, very large; second Mr. Coleman, Eastnor Castle, with *Bellegarde*, fine, but somewhat deficient in colour; third Mr. Jamieson, Haigh Hall, with *Bellegarde*. In the corresponding amateurs' class, first Mr. Elsworth with *Bellegarde*, very fine and well coloured; second Mr. Evans with *Royal George*; third Mr. C. Ford, gardener to T. B. Forward, Esq., Thornton Manor, with *Barrington Nectarines*. In the open class for one dish, first Mr. W. Coleman, Eastnor Castle, with *Elruge Nectarine*, excellent; second, Mr. Jamieson, Haigh Hall, with *Pine Apple*; third, Mr. J. Peers, gardener to R. Raynor, Esq., Wavertree, with *Lord Napier*. In the corresponding amateurs' class for six fruits, first Mr. Baker, second Mr. Wm. Evans, third Mr. Elsworth. The competition in these classes was very close, and the fruit was of superior quality.

**Melons.**—For one fruit, first Mr. John Stephenson, gardener to R. Horsfall, Esq., Grassendale Priory, Liverpool, with *Golden Queen*; second, Mr. Wm. Savin with *Conqueror of Europe*; third Mr. J. Hales, gardener to Mrs. Frangopulo, Aigburth, with *Conqueror of Europe*. For one dish of *Strawberries*.—First Mr. Mease with *James Veitch*; second Mr. Evans with *Lord Napier*; third Mr. Elsworth with *President*. All good. One dish of *Cherries*.—First Mr. Elsworth; second Mr. Mease, and third Mr. Elliott.

#### VEGETABLES.

In the open class for a collection of twelve varieties, distinct, first, Mr. Goodacre, Elvaston, Derby, with a good collection of first-class vegetables; second, Mr. R. Gore, Huyton; third, Mr. Lermont, West Derby. In the corresponding amateurs' class, first, Mr. Mease; second, Mr. Evans; third, Mr. Bustard, all staging meritorious collections. One brace of *Cucumbers*.—First, Mr. Evans with *Blue Gown*; second, Mr. Finnigan, Huyton. One dish of *Tomatoes*.—First, Mr. J. Wright, Aigburth; second, Mr. F. Faulkner, Woolton Hall; third, Mr. C. Finnigan. Four dishes of *Peas*.—First, Mr. Bustard; second, Mr. Evans. A collection of *Potatoes*.—First, Mr. Mease; second, Mr. Evans; third, Mr. F. Faulkner.

**IMPLEMENTS AND APPLIANCES.**—Of these there was a considerable display. Messrs. R. Halliday & Co., Middleton, Manchester, had an extensive stand of various garden structures, large and small and of evident usefulness, and were awarded a silver medal. Mr. Joseph Bramham, Dale Street, Liverpool, exhibited wirework as applied to gardening, together with the "Allerton Priory" boiler, and was granted a gold medal. Mr. Joseph Mee, Wood Street, Liverpool, had a similar honour for boilers of various shapes and sizes and of approved utility; Messrs. Bennett Brothers, Liverpool, a great variety of garden requisites (gold medal); Messrs. Webster of Wavertree sundry good frames and greenhouses; and Mr. Jack's wirework, &c. (silver medals) and Mr. Johnson's teak "pots" were highly commended. Mr. Francis Briggs, Sutton, Chester, exhibited views of rockwork which he has erected with great taste in some of the gardens of the neighbourhood.

Such was the first Show of the Liverpool Horticultural Association that was only suggested last autumn and fairly established this year. It was originated by the gardeners of the district, who felt that if they worked willingly and unitedly shows worthy of the town might be produced, superior cultivation promoted, and a wider interest in horticultural pursuits created. The first Show—a real gardeners' show—has been a greater success than the most sanguine anticipated, and with harmony of action in the future and a wider scope given to the operations of the Association, still larger exhibitions will be produced. The Association has been wholly managed by gardeners, Mr. Faulkner of Woolton Hall Gardens being the Chairman, and Mr. Bardney of Norris Green the Vice-Chairman of the Committee. Two hundred gardeners are subscribing members, and generous support has been given by the nobility and gentry of the district. The directorate has proved worthy of that support, and by the prudence that has been exercised in the management merits such further assistance

as will place Liverpool horticulturally in a higher position than has yet been attained by that wealthy and important town. As evidence of the care that has been exercised by the Committee, it is pleasurable to state that the success of the Show did not depend entirely on fine days, as sufficient funds were secured to pay the prizes and meet all expenses without relying on the gate money; so that what was taken on the two fine days will, with increasing subscriptions that will no doubt follow, enable better prizes and an extended schedule being prepared for another year. With such distinguished patrons as the Earl of Derby, the Earl of Sefton, and Colonel J. Ireland Blackburne, M.P., and with the Mayor of Liverpool as President and an influential list of Vice-Presidents; with a member of the firm of Baring Brothers (W. B. Halhed, Esq.) as Treasurer, and sound practical management, the Liverpool Horticultural Association can scarcely fail to become firmly established, and to exercise a wholesome influence on the horticulture of the district, as it will provide the public with a means of enjoyment at once salutary and instructive, and quite in harmony with the beautiful park which the Corporation has provided for the town. The prize money was paid at the close of the Exhibition.

### HARDY HERBACEOUS PLANTS.

A SEASON like the present so inimical to ordinary bedding plants is beneficial to well-arranged borders of hardy plants. The one particular point to be guarded against is to eschew all attempts at forming large collections of distinct species. This may be very interesting employment, but it is not the way to make the borders gay and useful. I lately had the pleasure of inspecting a large collection in course of formation by a private gentleman, and found numbers of plants, interesting and beautiful as individuals, but taking the effect of the garden as a whole it was to any ordinary observer very unsatisfactory; in fact there was no attempt at planting for effect, the sole aim of the owner apparently being to obtain the greatest number of species. Gardeners who want to please their employers must plant their borders with a selection of the best plants only, having at all seasons sufficient to insure an effective display—spring, summer, and autumn. We have in the kitchen garden some 300 yards run of these borders, and at the present time these are rendered very effective by dozens of clumps of double Pyrethrums, *Campanula glomerata*, a grand plant, though common; *Lychnis dioica flore-pleno*, *Geranium Endressii*, *Lupinus polyphyllus* in variety from seed, English and Spanish Irises. Dwarfier plants which give a character to the front rows consist of clumps of Pansies, *Dianthus plumarius flore-pleno*, *Achillea aurea*, *Campanula trachelium*, and various single specimens of species which bloom now. There are also various tall-growing plants in the back rows, which render the collection varied and interesting. Roses are coming on to take the place of these. Phloxes, in the best varieties closely planted; *Campanulas*, varieties of *persicifolia*; *C. grandis*, a fine old plant; Pinks, Picotees, and Carnations of the Glove section; late-flowering annuals sown to fill up the gaps left by the decayed foliage of Crocuses, Snowdrops, Narcissuses, Scillas, *Sanguinaria canadensis*, Anemones, *Sisyrinchium grandiflorum*, and other early-flowering bulbous plants which have done their part earlier in the year. Later on Tritomas, Michaelmas Daisies in many varieties, Japanese Anemones, Sunflowers, East Lothian Stocks, &c., keep the border gay until the approach of winter puts an end to their beauty.

In the flower garden is a mixed border about 100 yards in length planted for effect mostly in spring and autumn. This border is not strictly devoted to hardy herbaceous plants, as in this we have old plants of *Geraniums* in conjunction with *Calceolarias*, *Pentstemons*, *Asters*, *Gladiolus*, *Salvias*, the best annuals, &c., mixed with Tritomas, Phloxes, *Agapanthus umbellatus*, *Roses*, *Arabis*, Irises, &c. In the kitchen garden borders annuals are being dispensed with as much as possible, as these do not grow satisfactorily in borders where the permanent plants render it necessary to disturb the ground as little as possible. It is intended to re-arrange these borders this autumn, when a sufficient number of perennial plants will be planted to almost fill the borders.

In the keeping of borders of permanent hardy plants there is far more labour required than is generally supposed. As a matter of fact from April to November unceasing attention is necessary to keep them in good order. There is staking or tying off withered blooms, or putting a limit to some aggressive plant intent on smothering a lowly neighbour. Besides routine work, in order to have the plants strong and flourishing every third year the border will require overhauling and the soil lifted, the border manured and dug or trenched, and divided where necessary, re-arranged and planted.

In "spring gardening" as everybody is aware, hardy flowers furnish the plants necessary for making a display at that season. Later in the year none of these have the brilliancy of *Pelargoniums*, combined with their dwarf habit and continued floriferousness; neither have we in any hardy plant the rich leaf-colouring such as is found in *Coleuses* and *Athyrium*, but in extensive gardens a change to softer shades is not only allowable but commendable. In two borders planted for a late display we have a centre of Tritomas, a band of bedding Dahlias, another band of the soft *Sedum spectabile*, and an edging of the elegant *Dactylis glomerata*. Descending to more lowly subjects we have had a large circular border carpeted with *Veronica pectinata*, with scrolls formed with Golden Feather *Pyrethrum* and *Oxalis tropaeoloides*, the relieving plants being *Centaurea ragusina* or *Chamaepeuce diacantha*, *Sedum elegans* edging the whole design. Another bed which we have not been allowed to change has a large Sweet Bay for a centre, with *Sedum latifolium atropurpureum* round it; the main body of the bed being the golden-variegated *Thymus citriodorus*, with a broad band of *Santolina incana* as an edging. A large round bed we have filled with *Roses* pegged down, carpeted with *Violas* and edged with the pretty white variety of *Campanula pumila*. At present this edging is very beautiful. Hardy plants are also employed in combination with tender-flowering and foliage plants, as also in combination where both are employed. As is the case with mixed borders so with these in beds, a great amount of attention is requisite to keep them in thorough condition, the gain as regards their requiring less work being comparatively slight.

Of course in these days, when it takes a dozen plants to the square foot, any relief to the propagating department in spring is an advantage; but on the whole I would not so much recommend a large number of these hardy subjects to be grown on that account, as because of their own intrinsic merits, which are not the slightest amongst cultivated plants. The man who can see his way to employing permanent plants to a greater or less extent in flower beds or borders will be wise to do so.—R. P. B.

### ROSES.

I CANNOT agree with "A. C." that Duc de Wellington is the same or so much the same as Fisher Holmes as to be a synonym. In three places in my garden I have the two plants planted together. I often place *Roses* much alike together to compare them, and on the whole Fisher Holmes is more like Charles Lefebvre or Marguerite Brascac than Duc de Wellington, which is both brighter in the outer petal and deeper and more concentrated in colour than Fisher Holmes. I wonder more persons do not grow Madame Caillaud, it is splendid with me this year.

In your remarks on Manchester it was suggested that Messrs. Paul & Son ran a close contest in the seventy-tuos. I thought so at first as theirs were in a better light, but on taking the points accurately there was not the least doubt Mr. Cant was far ahead, and the second was also many points above Messrs. Pauls', who had spoilt their stand by some very coarse and overgrown blooms in the back row. Considering the short time allowed to the Judges, I was thankful I had two such good men to assist as Messrs. Jowitt and Soames.—C. P. P.

### ACANTHACEOUS PLANTS FOR WINTER FLOWERING.—No. 2.

#### BELOPERONE.

A GENUS containing many beautiful species; some of the finest, however, have not yet reached us as living plants. It is distinguished by a five-cleft calyx, the lower portion being three-lobed and most conspicuous, the upper portion concave; the stamens, two in number, are inserted in the tube of the corolla, and the anthers spurred at the base; stigma awl-shaped; ovary two-celled, with two ovules in each cell. All are natives of South America, and require to be grown in an ordinary stove temperature. The soil should consist of leaf soil, peat, sand, and loam well incorporated, and abundance of water must be provided whilst the plants are growing actively.

*B. ciliata*.—A handsome slender-growing plant of great beauty, attaining a height of about 2 feet, its free-branching habit being very favourable to the production of good specimens. The leaves are some 2 to 3 inches long, ovate lanceolate in shape, deep green above, paler below. Flowers pro-

duced in terminal fascicles in great profusion; colour purplish violet, the base of the lower portion of the corolla white. It comes into flower during the months of November and December. Native of Venezuela, &c.

*B. violacea*.—A plant of similar habit to the preceding, but not such a free-branching species. Leaves about 3 inches long,

broadly ovate acuminate, and deep green. Flowers produced in large terminal fascicles; colour soft violet. It blooms during midwinter. Tropical America.

#### LANKESTERIA.

This is a small genus of the order, the species here named



Fig. 13.—LANKESTERIA BARTERI.

being as far as we are aware the only one in cultivation. The soil should consist of loam and leaf mould in about equal parts, with a small portion of sand. In this compost we have found it thrive better than when peat mould is used. Being a native of West Tropical Africa it delights in strong moist heat.

*L. Barteri* (fig. 13).—Named in honour of the indefatigable but ill-fated traveller attached to Dr. Baikie's last Niger expedition. It is a bold-growing plant with large, opposite, oblong

lanceolate, acuminate, dark green leaves. Flowers produced in great profusion on long terminal axillary spikes; colour rich gamboge yellow, with orange centre. It flowers at the end of autumn and beginning of winter. Native of West Africa.

#### STEPHANOPHYSUM.

It is a remarkable fact that all the known species of this genus are American, saving the species here qu<sup>is</sup>



appears to be a native of West Africa, having been sent from thence by Dr. Baikie when on his last Niger expedition, and in honour of whom it is named. It is a strong-growing plant, well deserving a place in every stove for the brightness of its numerous flowers and the long time it maintains a display through the winter months. Culture same as *Lankesteria*.

*S. Baikiei* (fig. 14).—A suffruticose plant, attaining a height of 2 to 3 feet or more; less rapid in its growth than many plants of this order, and we would therefore advise the plants to be grown a second year. Leaves opposite, 4 to 5 inches long, ovate lanceolate in shape, light green. Flowers produced in large terminal panicles; corolla tubular with a recurved



Fig. 14.—STEPHANOPHYSUM BAIKIEI.

limb, upwards of 2 inches long, reddish scarlet in colour. It blooms during the whole winter. Native of West Africa.

#### DICENTRANTHERA.

Of the distinguishing characters of this genus we have no knowledge; as far as our experience goes it is the only species, and also very rare, at present in cultivation. It is a bold-growing plant, attaining a height of some 6 to 8 feet or more in its

native habitat, but fortunately it produces its flowers freely long before it reaches these dimensions. Being such a strong grower it should be potted in a heavier compost than is usually done with plants of this order, say about two parts loam and one part each of leaf mould, peat, and sand.

*D. macrophylla*.—A bold handsome plant. Leaves somewhat ovate lanceolate or obovate with undulate margins, about 1 foot long, smooth and deep green. Flowers numerous, about 1½ inch

long, deep rosy purple, internally white, produced upon erect terminal spikes about the same length as the leaves. It blooms in midwinter. Native of Fernando Po and various parts of West Africa.

### FRUIT PROSPECTS.

FROM several reports received from numerous places in Durham and Northumberland of the fruit crops this year, it may be generally said that all small fruits are up to or were above the ordinary average, whilst Strawberries seem to be very prolific indeed; but slugs are sadly interfering with them, and as yet very small quantities of fruit have been gathered, which have principally consisted of Black Prince. There has been an almost entire absence of sun, while rain has fallen more or less every day. All wall fruits are generally thin, Plums perhaps being best; but Peaches, Pears, and Apricots will not be near an average. It may be a fact worthy of notice here that in some cases where Peaches on walls have received no protection they are bearing the best crops. This is certainly the case at Axwell Park, and to a certain extent fully verifies your correspondent Mr. Witherspoon, when he stated in your columns that a Peach was as hardy as a Pear. Apples, Pears, and Plums on standards and pyramids are also very inferior, although better prospects as regards bloom were never finer, and at the same time the season being so late, it was considered of great advantage to the north; but the humid and wet state of the atmosphere must have had much to do with the failure.

The above observations may be said, with few exceptions, to represent the state of the fruit crops in the two counties, and one of the exceptions is Holeyn Hall; for Mr. Cook there has an excellent crop both of wall fruit, small bush fruit, and fruit on standards, small pyramids, &c., as some of the Pears and Plums on the wall he has had to thin. Early vegetables have been fully a month and six weeks late. In some instances Peas have been two months in bloom. We grow here William I. for our early Pea, but do not consider it the earliest one, the true Dillistone being earlier; but William I. is more productive, and therefore we do not mind waiting a few days longer, and this year it has just grown with us twice its height—viz., 7 feet.—B. COWAN.

### ROSE SHOW AT BEBINGTON.

THE first Exhibition of the Wirral Rose Society was held on July 29th in a tent erected in the Mayer Library Grounds, Lower Bebington. As an attempt to gauge the number and enthusiasm of local Rose-growers the success of the experiment must have proved very gratifying. For the silver cup of the Society, twenty-four cut blooms, distinct varieties, there were five entries. There were no fewer than sixteen competitors in the next class, twenty-four varieties of cut blooms (money prizes); seventeen entries in that of six varieties; sixteen in that of three varieties; ten in the single cut bloom, Hybrid Perpetual class; and seven in the one cut bloom, Tea or Noisette class. In the last class, open to all comers, nurserymen and growers for sale included, seventy-two distinct varieties of cut blooms, there were but two competitors, the explanation being the great difficulty, except to the most extensive cultivators, of securing so large a number of show blooms. The condition practically amounted to the exclusion of all nurserymen in the district. This, however, can hardly be regretted in one sense, as the result demonstrated the wealth of material existing among the resident gentlemen amateur class of growers, and their commendable spirit of rivalry. If such a show as that of Saturday could be got together in spite of the difficulties attending a first effort, and positively the worst season on record, what a glorious future the Society has before it!

We believe it owes its existence to a few earnest rosarians, who, having themselves realised the pleasures of the pursuit, were desirous of extending a knowledge of, and giving an impetus to, the practice of so delightful an art. This is the reason why the Society is made to embrace the extensive hundred of Wirral; but its *locale* could not have been more fittingly chosen than at Bebington, which seems indeed the very home of the queen of flowers. Every cottage has its Gloire de Dijon or its Général Jacqueminot, while the proprietors of some of the neighbouring villas literally number their trees by the thousand. Happily it requires no elaborate training, or technical knowledge, or especially fine taste, to grow and thoroughly appreciate a beautiful Rose. One of the most successful of Saturday's exhibitors is a gentleman who, it is said, does all his flower gardening himself, and whose pleasure ground is as admirable for its trimness and order as for being bright with flowers. For uniformity of excellence in so large a number, as might be expected, the palm must be awarded to the two collections of seventy-two each exhibited

by Messrs. James Dickson & Co., first prize, and Messrs. F. & A. Dickson & Sons, second. Still, scarcely any diminution of excellence was observable in the magnificent array of twenty-four blooms sent by Mr. T. B. Hall, Larchwood, which carried off the Society's silver cup. This splendid collection included Marie Baumann, La France, Paul Neyron, Charles Lefebvre, Marquise de Castellane, Dupuy-Jamain, Mdle. Eugénie Verdier, Thomas Mills, Monte Christo, John Hopper, Abel Carrière, Dr. Andry, Baronne de Rothschild, Prince Camille de Rohan, Etienne Levet, Madame Hausmann, Hippolyte Jamain, Princess Louise Victoria, Souvenir de Charles Montault, Alfred Colomb, Impératrice Eugénie, Sir Garnet Wolseley, Souvenir de la Malmaison, and Thomas Methven. The twenty-four Roses exhibited by Mr. William Just, Eastham, which secured first honours in Class 2, made up a wonderfully fine collection, and are equally worthy of being named individually. They were Magna Charta, Marquise de Castellane, Thomas Mills, Elie Morel, Comtesse d'Oxford, Madame Nachury, Anna de Diesbach, John Hopper, Charles Lefebvre, Marquise de Mortemart, Dr. Andry, Capitaine Christy, Etienne Levet, Madame Clemence Joigneaux, Madame A. Rothschild, Duc de Rohan, Boule de Neige, General Washington, Madame C. Wood, La France, President Willermoz, Gloire de Dijon, Prince Camille de Rohan, and François Michelon. Generally speaking there was a paucity of yellow Roses, those shown including Maréchal Niel, Belle Lyonnaise, Céline Forestier, Climbing Devonensis (an exquisite specimen), and Narcisse. Among the whites the purity of Baronne Maynard was especially striking. Souvenir de la Malmaison, with its delicate flesh tint and grand habit, was well represented. The pink section, of which La France and Baronne de Rothschild may be taken as types, were very plentiful. Bright reds, vermillions, crimsons, carmines, purples, were in almost endless variety; and the rich profusion of dark velvety flowers indicated the general estimation in which they are held. It required no little discrimination to distinguish between the conflict of names; some daring persons even essayed to point out the same Rose under three or four different titles.

There were one or two glaring cases of error in naming. Perhaps, also, a little more attention to correctness in the spelling might have been reasonably expected, seeing that the cottager class was entirely absent, and the ease with which authorities can be referred to. By-the-by, would it not be advisable to admit exhibits from cottage gardens at the next Show? There is no such thing as monopoly in the culture of Roses, and the much-coveted "Yellow Moss" may some day turn up in a lowly garden, just as the White Bath Moss and the Unique were discovered.

Mr. Dowie (Hoylake) and Mr. Elliott, gardener to Mr. W. G. Bateson, New Hays, Allerton, were the Judges.

### STRAWBERRIES.

THE season is now sufficiently advanced to enable me to speak with some certainty with regard to the crop—at all events in my own garden. I had a fair crop of Early Prolific, also of Keens' Seedling, a large one of Vicomtesse Héricart de Thury, rather a poor one of Sir Joseph Paxton and President; but the best crop of all was Myatt's Prolific *alias* Wonderful, which I grow in a double line as an edging. This unusual season suited this Strawberry very well. The crop was very large, and in places the fruit so crowded together that it would not have ripened if I had not placed forked sticks to support the fruit stems and keep them separated from one another. I do not consider this a first-rate Strawberry, but it was very useful this year when some of the others were less abundant than usual, and not being in a bed they dried more quickly.

I was glad to see your correspondent Mr. Laxton gives so good an account of Keens' Seedling and Sir Joseph Paxton, for these are two Strawberries which I have recommended as being two of the best in cultivation, and so they undoubtedly are in this district. Some people have discarded Keens' Seedling because the fruit is small after the first picking, but I think they have acted very unwisely if it thrives on their ground, and that is the only reason, for I obtain a larger weight of fruit from plants occupying the same space of ground than any other, and it renders me almost independent of the season. Sir Joseph Paxton has not done as well with me as last year. It ripens slowly, and there was an unusual number of mouldy berries, but that has been a common complaint with many varieties this year. I gave some liquid manure to one bed of Sir Joseph Paxton this spring, and I am sure it did more harm than good by encouraging the growth of too many leaves. I do not know that I shall try the experiment again. My Strawberries are well manured in November, and I think that is all they require. I have been trying three varieties lately which I have not had before—Lucas, Amateur,



and Souvenir de Kieff. They are all good, but I do not require them, although I think of continuing the first a little longer, as it is so well spoken of.

With regard to some of the later varieties, Frogmore Pine is not later than Sir Joseph Paxton, or I had the wrong variety sent me, and Eleanor is a great failure. I have grown it three years and never had half a crop. It is much inferior to the Elton Pine, and will not be continued. The varieties I recommend for this district are Roden's Early Prolific, Keens' Seedling, Sir Joseph Paxton, President, La Constante, Myatt's Prolific as an edging, and Elton Pine. The above are all I want except some others for preserving. The complaint is that they are too good and the preserve too rich. Some were tried in Red Currant juice and made an excellent preserve, but tasted rather too much of the Currant. Vicomtesse Héricart de Thury I am trying this year, and think of procuring Rivers's Eliza. Perhaps some of your readers can recommend a few more that are fair croppers and a little brisk in flavour. For soils where Sir Joseph Paxton and President are apt to run too much to leaf I should recommend Early Prolific, Sir Harry, Amateur, and La Constante. My method of cultivation is very similar to that of Rev. C. P. Peach, except that in droughty seasons I do not cut any runners off the late varieties.—*AMATEUR, Cirencester.*

### ON CIRCUIT.

WHILE Her Majesty's most honourable Judges are scouring the country, and Chief Justices, Chief Baron, Puisne Judges, and by whatever name they may be called, are to be found in every assize town in the kingdom, there are some of us who, although we have not attained the ermine or even the silk, have been engaged in a pursuit which, bearing the same name, yet exercises itself in a very different way. Before us are brought no beetle-browed ruffians, no slattern drabs on whose face crime has left its mark. We have to put on no black cap to condemn the wretched prisoners to the gallows or sentence them to penal servitude. We are judges, but I flatter myself we bear a greater similitude to Paris than to Judge Jeffries, and instead of holding a bloody assize we hold the golden Apple, and have to adjudge it in accordance with its inscription, "*Detur pulchriori.*" True we have some criminals at times, as for instance when an impostor calling himself Rev. H. D'Ombraing was placed amongst a set of lovely dames, as if he belonged to the refined family of the Teas, when punishment had to be meted out to him. We are, indeed, sometimes obliged to complain of even high-titled ladies that they are faded or dirty (imagine our impudence)! but that is all. Then we are not obliged to listen to Mr. Serjeant Fuzfuz, or his dear brother Mr. Serjeant Fuzbuz, as they so beautifully argue that black is white. No, our judgment is carried forward in silence and quiet. We allow each candidate to show themselves off to the best of their ability, and so give fair play to all. Well, I have been lately on circuit in this capacity, and as the places where the assizes have been held have before now been noticed in the Journal it may be of interest if I record my experiences.

### NEWTON STEWART.

It is now four years since, yielding to the earnest request of a brother parson who is now in Ceylon, and who, I hope, is not included in Heber's line, "Where only man is vile," I journeyed to this somewhat out-of-the-way place, but which, notwithstanding, is the only one so far as I know where exhibitors from the three kingdoms have exhibited together, with the exception of Helensburgh, in the same part of the world. The ready access to the north of Ireland by Stranraer enables those very successful growers the Messrs. Dickson of Newtonards to compete, while in former years Messrs. Cant, Paul, and Cranston have entered the lists. The Scotch nurserymen are at home, so that the Shamrock, Rose, and Thistle can meet together in the same friendly contest. Like all Rose shows this year it has shown the evidence of the severe and trying season we have passed through—so severe in the north of Ireland that in that district, usually so free from severe weather, not only had they thirteen weeks in winter during which they were unable to put a spade into the ground, but in the middle of June, as Mr. Dickson informed me, the cars coming into Newtonards were covered up to their axles in hail, that all the foliage was cut off the Roses, and even the Potatoes were left with only the ribs of the leaves showing. All who know Ireland know how exceptional this is, and all Rose-growers will estimate the difficulty of coming up to one's usual form in such a case, and yet a most beautiful stand was shown by them, gaining the first prize and the National Society's silver medal. Messrs. Dickson staged their flowers in painted and highly varnished stands, such as are used for Dahlias, and elevated above the stand a few inches,

and to my mind this is preferable to moss provided it suits the flowers as well. Moss is not always presentable, and I cannot say that dyed wool, as we have seen it this year, is any improvement; whereas the bright green stand is always fresh and neat. Not being an exhibitor I cannot say how they would stand as to colour, &c., but I am bound to acknowledge as shown by Messrs. Dickson they were exceedingly elegant and good. Amongst the varieties exhibited by them were Alfred Colomb, Xavier Olibo, Mons. Noman, Ferdinand de Lesepe, La France, very fine; Mrs. George Paul, Marguerite de St. Amand, Duc de Wellington, very good; Mons. E. Y. Teas, fine; Etienne Levet, Horace Vernet, Marie Baumann, very good; Baronne de Rothschild, Constantine Fretiakoff, Richard Laxton, very fine; Comtesse de Murinais, Earl of Beaconsfield (Bennett) very good. Constantine Fretiakoff is like Comtesse d'Oxford, but perhaps an improvement on that popular flower. Lord Beaconsfield was good. It is a seedling introduced by Mr. Bennett of Salisbury, but not one of his own raising. Mr. Smith of Stranraer was second in this class, with blooms inferior indeed to Mr. Dickson's, but greatly in advance of his exhibits of four years ago. Amongst his blooms were Duc de Wellington, Thomas Mills, always good in this climate; Mons. E. Y. Teas, very fine; Louis Van Houtte, Penelope Mayo, of fine form and good colour; Richard Wallace, John Fraser, a Rose I have not seen for years, and it is often thus in these provincial exhibitions one comes across some neglected or forgotten Rose, making one question whether it had been justly condemned; Sultan of Zanzibar, which has been shown very good this year, but too like Reynolds Hole in colour; Maréchal Vaillant, Camille Bernardin, Fisher Holmes, very like Duc de Wellington, and Charles Lefebvre. The same exhibitor occupied similar positions in twelve Teas and Noisettes. Mr. Dickson's stand contained good examples of Comtesse Ovaroff, Niphotos, Alba Roses, Madame Willermoz, Maréchal Neil, Madame Mielan Carvalho, a seedling from Cloth of Gold, somewhat deeper in colour, but I fear, like it, shy-blooming; Madame Marie Amand, Madame Levet, and Cheshunt Hybrid. Mr. Smith's contained many of the same sort, but he had also Madame Lambert, a rose-coloured flower of good form. It is also said to be a good grower.

Passing now to the amateurs, there was a manifest improvement in the greater number of the Roses, notwithstanding the season; and by amateurs I mean not growers for sale, as there is a distinction made between the gardeners of private gentlemen and amateurs who do not keep a regular garden. Mr. Kirk exhibited an excellent twenty-four, obtaining first prize and the National Society's bronze medal, in which were fine blooms of La France, Louisa Wood, Princess Mary of Cambridge, Etienne Levet, Charles Lefebvre, Annie Laxton, Sultan of Zanzibar, Duc de Wellington, Duke of Edinburgh, Catherine Mermet, Dupuy-Jamain, and other well-known kinds; and Mr. McMorren amongst those strictly amateurs exhibited some fine blooms. One class here I have seen advocated for general adoption—viz., sweet-scented Roses, but my experience is not favourable. I should have disqualified all but one stand; but when I was assured that Souvenir de la Malmaison was a perfumed Rose it was clear to me that noses are not all of the same pattern even as to their olfactory nerves. The Society has made such good progress, has thrown itself so thoroughly into the endeavour to secure a good Show and to diffuse a taste for Roses, that it is a pity anything should fall short in it; and therefore I hope and believe that it will no longer tolerate the addition of foliage, which it now permits. To see Tea-scented Roses surrounded by Hybrid Perpetual foliage is not a pleasant sight, and as I have said it is doomed here, in the last place in which I know the rule to exist.

I must reserve Helensburgh and Leek for my next paper, only adding that the same kind and cordial greeting I have ever had here was no way diminished, and everything was done to make my short sojourn an agreeable one.—D., Deal.

### LIQUID MANURE FOR FORCED STRAWBERRIES.

UNDER the above heading "AN OLD GROWER" says (page 65), that "no stimulant acts more promptly than water in which a little nitrate of soda has been dissolved." This is worth repeating half a dozen times a year, until every reader of the Journal who cultivates Strawberries has it impressed on his memory. We have tried it again and again on Strawberries in pots and in quarters, and it is most effectual in swelling-off fine berries.

Last year our employer condemned a bed of Strawberry plants which had done good service for eight years running! The reason was that the plants were exhausted. Now we do not believe in Strawberry plants getting exhausted so long as they can find their proper food; but if that is not to hand of course the plants will fail. We wished to experiment on the old plants, for we were loth to dig them up, as we have always much trouble in obtaining a young plantation in proper form. We asked a year's respite for the plantation, and a few pounds of nitrate of soda, and prophesied (from past experience) re-

newed vigour to the old plants. We obtained our request, so in September last year we gave a good top-dressing of decomposed manure as usual. Our soil is thin—8 inches—and miserably poor and stony, and an annual top-dressing is necessary. During winter the ground was soaked with cow's urine, also an annual process with us which we find of great benefit. In April we sprinkled between the rows a good dressing of nitrate of soda, and now (July 26th) the old plants are extremely robust, and carrying such a profusion of vigorous stalks bearing clusters of such berries as we believe was never seen before in the garden. The variety is Garibaldi (Vicomtesse Héricart de Thury). We left  $1\frac{1}{2}$  foot between the rows to give plenty of room for straw, and over this space the stalks are reaching and interlating with those of the neighbouring row, and are so borne to the ground that we were obliged to run cord along each side, supported every 2 feet or so by sticks, to prevent them lying in heaps on the ground. Oh! for sun to ripen them, and oh! that the rain might cease! "The rain it raineth every day" here, and for the sun we never see it at all; but that is everybody's cry.

Before closing it might be worth while directing attention to the fact that the ash of Strawberries (the fruit) contains as much as 27 per cent. of soda and 21 per cent. of potash. Horse droppings, which your correspondent "OLD GROWER" stacks with his loam to make it rich, afford only 2 per cent., and of potash something like 11 per cent.; hence the beneficial action of nitrate of soda. Guano does not afford much more soda than horse droppings; and as for potash, it ought to be known that of the whole manurial matter in cow urine 24 per cent. consists of potash salts. As for bones, they afford neither potash nor soda, but are still very good in an ordinary compost; and the stacking of loam with horse droppings, as advised by "OLD GROWER," is also a capital plan for getting ordinary loam into a fine potting condition. A good soaking of cow urine applied to the loam stack further improves it, and such prepared loam is capital for growing-on Strawberry plants or, indeed, any loam-loving plant, but sometimes further aid is necessary before perfection is attained. Observation, experience (that of others as well as our own), science—what an amount of delight these throw on the commonest everyday occupation!

It is well when we read attentively and aright the lessons which lie in a handful of salt, a potful of loam, a spadeful of manure, or a square foot of atmospheric air. Speaking of salt reminds us that we have noticed very good results from a sprinkling of this on Strawberry beds, especially when accompanied by a soaking of diluted cow urine.—SINGLE-HANDED.

**PIE CRUSTS.**—Resolution of the National Rose Society:—"That the Society discontinue by every means in its power the holding of two-days Rose shows." Result—That in the present year, the President and many members of the Committee who passed this resolution have not only competed at Norwich, a two-days show, but have done their best to resuscitate the Birmingham Show on the same objectionable basis. If all the Society's resolutions are to be treated in the same manner, may not we suppose they were made to be broken?—VERY MUCH PERPLEXED.

#### NOTES AND GLEANINGS.

THE number of persons who paid for admission to THE ROYAL HORTICULTURAL SOCIETY'S GARDENS on Bank Holiday, August 4th, was 11,342 at 2d. = £24 10s. 4d.

THE STORM on Saturday night and Sunday morning produced some disastrous effects in the west of London, particularly in the neighbourhood of Kew and Richmond. The unusually heavy rain was accompanied by hail of great size, some of the hailstones having been found to be 5 inches in circumference. The houses in Kew Gardens have suffered severely, upwards of 16,000 squares of glass having been broken, and many of the plants are damaged, and in consequence the houses have been closed since Sunday. The nurserymen and market growers of the neighbourhood have also had a great quantity of glass destroyed, and the storm is stated to have been one of the most severe ever witnessed in the locality. The Royal Horticultural Society's Gardens at Chiswick escaped with comparative immunity, only about 300 squares of glass being broken. Much damage was done in the neighbourhood of Reigate. At Wray Park (Mr. Simpson's) the injury was very serious; at Sunnyside (Mrs. Farquhar's) upwards of a thousand squares of glass were broken; at Great Doods (Mr. Water-

low's) 1200. Trees were stripped of their leaves, while fruit, such as Apples, Pears, and Gooseberries were to be seen the next morning strewn about at every step. Some of the hailstones exceeded  $3\frac{1}{2}$  inches in circumference.

MR. J. WITHERSPOON writes to us concerning the absence of the lower leaves on VINE LATERALS as follows:—"I have an idea this singularity is simply the result of scalded leaves being removed after the sun has caught some young hand napping."

THE same correspondent writes in reference to the FRUIT CROP—"Between trees killed right out and some varieties heavily laden I have some in every condition, but after a close examination of the fruit spurs I find none without evidence of last winter's severity."

GREAT excitement was caused in the neighbourhood of Mallow in Ireland last week by the reported appearance of the COLORADO BEETLE. A specimen of the insect was forwarded to us, and it proved to be the harmless *Pentatomia dissimilis*.

AMONG the ORCHIDS at Smeaton Gardens near East Linton, N.B., there are at present some splendid specimens of Stanhopeas in flower. These consist of large plants in wire baskets of *S. tigrina* with several spikes each; *S. oculata*, also with several spikes. *S. insignis* and *S. Martiana* are showing for flower later on. Numerous pieces of the beautiful *Miltonia spectabilis* are coming into flower, not one here and there over the plants, but these will be covered with flowers; the largest specimen is some 3 feet across. There are also remarkable specimens of the following good old species—*Cattleya Skinneri*, 4 feet through; *Aërides odoratum*, 5 feet through; *Dendrobium densiflorum*, 3 feet through; *Cattleya crispata* in varieties, and some extra large specimens, the finest being a plant of *C. c. intermedia* roses; *C. Mossiae* is grown in many varieties; *C. Acklandiae*, some 2 feet through. Such good old kinds as *Zygopetalum Mackayi*, *Lycaste Harrisoni*, *Oncidium sphacelatum*, *Laelia anceps*, and *Calanthe veratrifolia* are represented by extra large specimens. Of plants of later introduction there are many good healthy pieces of *Saccolabium*, *Aërides*, *Phalsenopsis Schilleriana*, *Renanthera coccinea*, *Collogynes*, *Oncidiums*, &c., which only require time to be as large as some of the older species are now. Mr. Black regards the Orchids as his own particular charge; he pots them, waters them, and attends to all their wants himself; hence, no doubt, the grand old plants which make one envious. Besides the Orchids there will be in a few weeks a fine display of *Yucca gloriosa* in flower. Many of the plants are throwing strong spikes up just now.

WE recently noticed an instance of the manner in which shelter prevents the BLISTER AND CURL OF PEACH LEAVES. Young trees planted in an open nursery have their leaves and shoots seriously affected; but a short distance from them is a large space of ground surrounded by large Yew hedges, and there the growth of the Peaches was remarkably clean and vigorous, and presented a striking contrast with those first noticed. This must be entirely due to protection from cold winds provided by the hedges, as the soil and other conditions are precisely similar.

MR. G. EASTON, late gardener to M. R. Smith Esq., Heathlands, Wimbledon, has been appointed gardener to C. R. Hodgson, Esq., Copt Hall, Mill Hill, Hendon; and MR. JAMES BURDEN, gardener to D. B. Chapman Esq., Downshire House, Roehampton, succeeds Mr. Pocock as gardener to E. Saunders, Esq., Fairlawn, Wimbledon, S.W.

IN the gardens attached to Mr. Brunlee's residence on Wimbledon Common we lately saw some remarkably strongly grown DELPHINIUMS. Several were quite 9 feet in height, and with stems like Hollyhocks. The plants were very stately and beautiful.

THE following PLANTS in the unique collection of the Right Hon. Sir William Hutt, Appley Towers (described on page 350, vol. xxxv.) have succumbed to the severity of the past winter—The Guava tree, Tree Fern, *Araucaria excelsa*, *Brugmannias*, *Correas*, *Eriostemons*, *Acacias*, *Hakeas*, *Casuarinas*, and small plants of *Eucalyptuses*. Some of the more noticeable that have passed the winter in comparative safety are *Abelia floribunda*, *Acacia armata*, *A. dealbata*, *A. longifolia* magnifica, *Agapanthus umbellatus*, *Akebia quinata*, *Aralia Sieboldii*, *A. papyrifera*, *Araucaria braziliensis*, *A. Cookii*, *Arundo Donax variegata*, *Azalea indica*, *Berberidopsis corallina*, *Bignonia grandiflora*, *Calceolaria violacea*, *Clethra arborea*,

*Coronilla glauca*, *Clinanthus puniceus magnificus*, *Choisya ternata*, *Chamaerops excelsa*, *C. Fortunei*, *Desfontainea spinosa*, *Desmodium penduliflorum*, *Dracena australis*, *Dasyliroton sp.*, *Elaeagnus japonicus variegatus*, *E. Sieboldii aureo-variegatus*, *Embothrium coccineum*, *Eurya latifolia variegata*, *Eucalyptus amygdalina*, *E. globulus*, *E. marginata*, and three other species, *Fabiana imbricata*, *Grevillea rosmarinifolia*, *Illicium religiosum*, *Lagerstromia indica*, *Lomatia heterophylla*, *Leptospermum lanigerum*, *Metrosideros floribunda*, *Lapageria rosea*, *L. alba*, *Nerium Oleander*, *Thea viridis*, *T. bohea*, *Stauntonia latifolia*, *Swammerdamia antennaria*, *Rhynchospermum jasminoides*, *Pittosporum Tobira*, *Aloysia citriodora*, *Olea species*, *Azara dentata*, and *Escallonia* in variety.

— THE Rev. George Henslow, F.L.S., has just published the "STUDENT'S CATALOGUE OF BRITISH PLANTS." It is arranged according to Sir J. D. Hooker's "Student's Flora of the British Isles," and will be found extremely useful to those who are prosecuting this branch of botanical study. It forms a pamphlet of forty-four pages, and is printed in a bold clear type. It may be obtained by post of Bateman, High Street, Portland Town, on forwarding 1s. 6d. in postage stamps.

— IN the GREENHOUSE at Kew several attractive plants are now flowering. *Bignonia speciosa*, a native of Uruguay, is bearing numerous delicate pale purple flowers, which appear very pretty hanging from the roof. *Rhodochiton volubile*, another climber, is at its best. The flowers are very abundant; the calyx is campanulate, purplish pink; the corolla tubular and dark maroon-coloured—a very curious contrast. *Datura Knightii* and *D. sanguinea* are bearing several of their large trumpet-shaped flowers. The general appearance of this house is now very bright and fresh.

— MR. ALLIS, writing to us from Old Warden, Beds, states that a SEVERE THUNDERSTORM passed over there on the evening of the 2nd and early morning of the 3rd inst., and continued for three or four hours. The lightning was unusually vivid and continuous, with very heavy peals of thunder. The rain fell in torrents;  $2\frac{1}{2}$  inches fell during the storm. Low-lying districts are very much flooded, and much hay is swept away. Several trees were struck by lightning, and some were smouldering the following day. Game has been killed, fish ponds overflowed their banks and the fish washed away; many Potatoes were washed out of the ground, and the injury done to gardens generally is very great.

— AN entomological correspondent sends us the following relative to the ENEMIES OF THE PEA:—In the current number of the "Entomologist" Mr. E. A. Fitch gives some notes on the prospects of 1879, and he reports from Essex a considerable amount of present and prospective damage owing to the abundance of certain insect pests. Besides the too well known aphides and stonies he finds the common wood-louse (*Oniscus asellus*) very assiduous and abundant, having persevered in its attacks since the early spring. A less commonly observed enemy of the Pea is a small myriapod (*Polydesmus complanatus*), which Mr. Fitch found in swarms in some patches; these are white in colour, slender, and each deeply cut segment of the body bears two legs. North Kent does not appear to have suffered as much, at least in the fields, and though some species of those insects which the gardener dreads have shown a tendency to be very numerous this season some have undoubtedly been thinned down by the rains and winds, hence we perceive gardeners are not agreed whether 1879 will stand out as a black year because of its insect plagues.

THE BEIGATE ROSE SHOW.—I have to thank my friend Mr. Payne (see page 72) for correcting me; but it was not ignorance. I wrote the names as he has corrected them, but my writing is not always like copperplate, and the printer (small blame to him) made the nearest hit he could to the mark.—D., Deal.

## WORK FOR THE WEEK.

### KITCHEN GARDEN.

Sow Cabbage seed for the main crop. Heartwell Early Marrow, Hill's Dwarf Incomparable, Nonpareil Improved, Wheeler's Imperial, Cattell's Reliance, Enfield Market, and Battersea are all excellent; the two latter are of large growth. Red Dutch is the best for pickling. The earliest plants must be pricked out as soon as they are ready, so as to secure sturdy plants. The advantage resulting from this mode of treatment more than compensates

for the time occupied in its performance. The sowing of Tripoli Onions should be completed with as little delay as possible, also of winter or Prickly Spinach. Another good sowing of Turnips should be made for winter use. The Red American Stone Strap-leaf, White Stone Golden Ball, and Chirk Castle Black Stone are admirable varieties. Carrots for spring and early summer use may now be sown, selecting the Horn or intermediate varieties, sowing them in drills about 9 inches apart in a sheltered place, the soil being of a friable nature and free if possible from wireworm. Broccoli and winter greens may still be planted as ground becomes vacant. The planting of Canflowers and Broccoli for autumn and early winter use should be completed as soon as possible. Where Endive is in request a good breadth should be planted with the early plants. Take advantage of suitable weather for earthing early-planted Celery, supplying later crops with water or liquid manure liberally, completing as soon as practicable the planting-out of the latest plants. To ensure a supply of Lettuce for early salads in spring the seed should be sown on a sheltered border, where the plants can be covered with frames in winter. We employ plant protectors and ordinary lean-to frames of about 4 feet width, sowing the seed in rows about 8 inches apart. There will be a large amount of refuse now accumulating at the rubbish heap, which should have attention when other operations are impeded by unfavourable weather.

### HARDY FRUIT GARDEN.

The recent genial weather has assisted the ripening of soft fruits. The Strawberry crop is much damaged by wet in some localities. After the crop of Strawberries is gathered the runners should be cut off close to the stools all around and the plants thoroughly cleaned of weeds, it being important that the crowns have full exposure so as to admit of their becoming well developed. Except in soils where the plants do not make much leaf-growth it is not desirable to keep the plants beyond the third year, so that it is necessary to plant a third portion of the quantity required each season. In light soils the Strawberry is best treated as an annual, or at most as a biennial. In making new plantations no time should be lost, the ground being first trenched and well manured. Select the strongest runners, and preferably those that have been layered in pots and are well rooted, planting them 2 feet apart every way, which will be sufficient for the plants as annuals or biennials; but for remaining two or three years the distance for such free growers as Sir Joseph Paxton, President, &c., should be fully 6 inches more. The soil will require to be rendered firm about the plants. The three best Strawberries for general purposes are Vicomtesse Hericart de Thury, Sir Joseph Paxton, and President. The foliage of many fruit trees, particularly the more tender varieties of Apples and Pears, have a spotted blistered appearance, and the fruit is also spotted and disfigured. This is to some extent due to the hail that fell during the early part of the season when the leaves were tender. These trees as compared with others are making only a small amount of wood, and should have a few waterings with weak liquid manure. Vigorous trees, on the other hand, should be well attended to in pruning to let in light and air, as this season the spurs will need all the aid that can be afforded to induce them to form perfect fruit buds. Apricots have lost many branches; encourage fresh growth in their places. If the trees are carrying a heavy crop and are not very vigorous an occasional watering with liquid manure would help the fruit in swelling. Peaches and Nectarines are at last making headway—indeed, some have an extra quantity of gross shoots that require to be removed at once. Lay the wood in thinly, and any trees that are growing too luxuriantly mark for lifting in autumn as soon as the leaves begin to fall. This is the best way to keep Peach and Nectarine trees in a healthy fruitful state. Although the crop of some varieties of Pears, Plums, and Apples is nil, of others but scant, the crop on some trees and kinds is greater than they will be able to mature. These should be freely thinned without further delay. Continue to keep the leading shoots of wall-trained trees of all kinds closely nailed or tied in, removing or stopping superfluous or foreright shoots in order that the young wood retained may have a chance of ripening. Morello Cherries in cold localities will not ripen for some time yet, but when they show indications of ripening they must be efficiently protected from birds, and after hanging some time this fruit is by some esteemed for dessert. A few bushes of Red Warrington or other late Gooseberry, together with Red and White Currants, should be well protected with nets of small mesh to preserve the fruit until a late period.

### FRUIT HOUSES.

Figs.—The second crop on early forced trees will now be ripening fast, and watering at the roots must be diminished and syringing discontinued. As soon as the fruit is all gathered the trees may have a good washing with the syringe or garden engine to free the foliage from red spider, otherwise a free circulation of dry warm air should be maintained in the house until the foliage begins to fall off naturally. The earliest forced trees in pots should be placed out of doors in a sunny position, not allowing them to suffer by want of water; the exposure to the atmosphere will harden the wood, which is of great importance, especially to the soft spongy wood of Figs. Young trees in pots from cuttings

in the spring, and which are intended for fruiting in the second or third year of their growth, must still be attended to in pinching off the tops of all the strong shoots to form the foundation of a symmetrical head in their first year's training.

**Pines.**—To retain a Pine sucker on the parent plant after it has attained a proper ripeness is more detrimental than otherwise; the sooner, therefore, it is removed the better. The suckers produced by the early summer fruiting plants should now be started. The treatment most suited to such plants as indicated in our last calendar should be continued until a growth in the plants is perceptible, when shading should be gradually discontinued. See that the heat of beds which have been reversed or upset by the removal and replacing of plants does not exceed 95° without immediately raising the pots, inattention to which will be most disastrous, especially in the case of plants bearing fruit. Shading for an hour or two at midday in bright weather during May, June, and July is highly beneficial where the plants are grown near the glass and the panes of glass are large; but there has been little need of it this season, and it is now unnecessary, as the plants need every ray of light and sunshine with a liberal supply of air when the temperature in the house stands from 85° to 95°; the night temperature for fruiting plants being kept at 70° to 75°, and for succession plants at 65° to 70°.

**Melons.**—Encourage the plants just planted out to make a strong and quick growth. A minimum temperature of 70° should be maintained, and a maximum of 90° to 95°, keeping the atmosphere moist. Train with one stem only, and allow it to advance two-thirds up the trellis before stopping, pinching off all laterals between the bed and trellis as they appear, being careful to retain no more wood than will have thorough exposure to light and air. Afford support to heavy fruit hanging beneath trellises by means of tables or nets, applying water sparingly when the fruit is ripening, but do not, however, allow the foliage to flag. Earthen-up plants that have just set the fruit, placing a little quicklime round the collars as a check to canker, which is unusually prevalent this season, and when it appears must be promptly rubbed out with quicklime. Late crops in pits and frames should have a steady bottom heat.

**Strawberries in Pots.**—Runners intended for forcing should be transferred without delay into the fruiting pots. The plants for early forcing succeed in 5 or 6-inch pots. Turfy loam with an admixture of about a fifteenth of bone dust is a suitable compost, giving preference to a loam of a rather strong but friable texture. Pot firmly, keeping the crown of the plants rather high, and allow a depth of half an inch from the rim for watering. Stand the pots on a hard bottom in a situation where the plants will have every advantage of light and air, and with due attention to watering and the removal of runners the plants will grow vigorously and mature the crowns early. Plants of the strong-growing varieties intended for late forcing may have 7-inch pots. Plants that were layered into the fruiting pots will need to be well supplied with water, and must have the runners removed.

#### PLANT HOUSES.

**Stove.**—Allamandas that have been for some time flowering must be regularly supplied with liquid manure; those with confined root space, as those in pots, will require it more frequently. The earliest-flowered Gloxinias should be gradually dried off, and not, as is sometimes done, by withholding water altogether. Plants for late flowering should be kept near to the glass and be well supplied with water alternated with weak liquid manure. Gesnera zebrina, G. splendens, and G. exoniensis must not be placed under the shade of other plants or be kept at a great distance from the glass. Stout short growth is essential to ensure the production of strong flowering shoots and handsome leaves. *Eschynanthuses* are fine for baskets in late summer and autumn. If allowed insufficient water they will cast the flowers, and too much water will have a similar effect. Considering that these plants flower at a time when bright flowers are not plentiful it seems strange they are not more grown. *Tillandsia Lindenii* as a small decorative plant is beautiful, its intense blue flowers being very effective. Sandy peat well drained suits it well. *Gardenias* raised from cuttings in spring must not be allowed to become root-bound, but should be shifted into pots 8 inches in diameter. *Toxicophloeus Thunbergii* is a very distinct plant of good compact habit, not unlike a *Gardenia*; the flowers white, produced freely in corymbs like a small *Lxora* alike from the points of the shoots or axils of the leaves, and are sweetly scented. *I. spectabilis* is similar in habit and very desirable. They thrive best in sandy peat, not requiring a large extent of pot room, they flowering freely in a small state. Roof climbers should be looked over frequently, keeping the growths within reasonable bounds, and to admit light to the plants beneath. Fumigation will be necessary to keep thrips in check, frequently examining plants subject to scale and mealy bug. Fire heat has been a necessity until now, and cannot be yet dispensed with. The night temperature must be kept at 70° and 75° by day, advancing to 85° or 90°. Syringe lightly morning and afterwards, taking care to have the foliage dry before nightfall. If red spider obtain a hold, as it generally does, on the under sides of the leaves of *Draconas*, sponge with soapy water, and afterwards with clear rain water. Indeed plants

grown for the beauty of their leaves and not hairy can only be kept in good condition by an occasional sponging.

#### TRADE CATALOGUE RECEIVED.

E. H. Krelage & Son, Haarlem.—*Catalogue of Bulbous Plants.*

#### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

**ADDRESS (A. F.).**—Write to Mr. Cannell, The Nurseries, Swanley, Kent, who supplied last year what you require, and may possibly do so now.

**A TWIN ROSE (J. A. W.).**—When Roses are growing vigorously, as yours appear to be, they occasionally produce flowers like the example you have sent. The "freak" is not peculiar to the variety *Bessie Johnson*.

**BREEDING PELARGONIUMS (F. Thomas).**—The flowers you sent were not remarkable or distinct in any way from varieties already in commerce, although the trusses were good and the colours bright.

**LARGE PEARS (Sidmouth).**—The large Pears you refer to are Catillac and Uvedale's St. Germain. You ought to be able to procure them at any good nursery.

**PLANTS FROM CAIRO (E. L. Lister).**—All the plants you mention will do with ordinary greenhouse treatment. There is nothing special about any of them that requires anything particular in its management, and in general terms if you treat them as if they were *Fuchsias* they will do very well.

**STRAWBERRY (F. V. B., Down).**—The Strawberry you sent is neither Sir Harry nor Sir Joseph Paxton, but a worthless variety of which we do not know the name, if it ever had one. You had better throw it away.

**PLANTS FOR SHADY ROCKWORK (J. C. W.).**—We presume the rockwork is not densely shaded by deciduous or other trees, in which case few things would succeed except Ferns, but if not so situated the following may answer:—*Arabis alba*, *Ajuga orientalis*, *Anemone apennina*, *A. nemorosa*, *Aubrietia deltoidea* and var. *grandiflora*, *Callixene polyphylla*, *Cyclamen coum vernum*, *C. hederifolium*, *C. neapolitanum*, *Dianthus floribundus*, *D. glacialis*, *Epigaea repens*, *Hypericum calycinum*, *H. nummularium*, *Lamium longiflorum*, *Meconopsis cambrica*, *Myosotis sylvatica*, *Omphalodes verna*, *Papaver nudicaule*, *Ranunculus pyrenaica*, *Rhododendron hirsutum*, *Vinca acutifolia*, *V. minor*, *V. major*, and *V. elegantissima*.

**SOWING ANNUALS (E. H. E.).**—*Limnanthes Douglasii*, *Candytuft*, *Eschscholtzia*, *Saponaria*, *Clarkia elegans* and *C. integripetala*, *Catananche cerulea*, *Convolvulus minor*, *Linum grandiflorum*, *Nemophila insignis*, *Pyrethrum aureum*, *Mignonette*, and *Silene pendula compacta* should be sown early in April and where they are to flower, we presuming that you intend to substitute them for *Geraniums*; but if intended for spring flowering they should be sown the early part of September, except those marked with a star, which should be sown in spring; and the sooner the *Silene*, presuming it be wanted for spring flowering, is sown the better. Seed of *Antirrhinum*, *Canterbury Bells*, and *Indian Pinks* ought to be sown at once, and would have been better sown six weeks earlier.

**TUBERS ON POTATO STEMS (Your Subscriber).**—They are uncommon, but we have seen other instances.

**MELONS NOT THRIVING (A Lady).**—Possibly the soil you have employed is unsuitable, being too light and fine; but we suspect the chief cause of the fruit not setting and swelling freely and the foliage decaying prematurely is the result of a too cold and moist atmosphere. Melons cannot be successfully grown in dung frames during a season like the present without fresh linings of fermenting materials are periodically applied, so as to provide a temperature of from 60° to 65° at night, with the lights raised about half an inch at the back of the frame. You cannot renovate the plants this year, but with the experience you have gained you will probably succeed in producing satisfactory crops next year if the season is more favourable, as we hope it will be, than the present ungenial summer. If you can increase the temperature of the frame do so, and ventilate freely, never having the lights closed entirely however dull the weather may be.

**STRIKING ALLAMANDAS (T. G.).**—Select cuttings from short-jointed growths and insert them in sandy soil, placing the pots in heat, shading and keeping the foliage fresh as long as possible, and most of the cuttings will emit roots readily. See notes by Mr. Barnard in another column.

**DIGGING EARLY POTATOES (Amateur, Kingston).**—The prolonged growth is wholly the result of the continuous rains. If the tubers have attained to a fair size and you want them for seed take up the crop at once, spreading the tubers thinly in a cool shaded place, such as a shed, and they will ripen better than if left in the ground during a season like the present.

**GRAPES SCALDED (J. B. Notts, and Gardener).**—The prolonged dull weather followed by sudden outbursts of sun, especially early in the morning, has caused many Grapes to be injured in the same manner as yours are. The remedies are careful ventilation, leaving a little air on at the top of the house all night and admitting more before the temperature rises materially, in the morning—not after it has risen. If this fails, then it may be necessary to sprinkle a little lime wash on the glass over the Vines that are the most affected. Do not prune the laterals too closely, but allow as much foliage to form as you can without overcrowding.

**DESTROYING DANDELIONS (A. M.).**—Sulphuric acid can be purchased cheaply from any chemist and druggist. It is not necessary to cut off the tops of the weeds before the acid is applied, as if a little of it (a drop or two) is dropped quite into the hearts of the plants the leaves will speedily wither and the roots die. When properly applied we have never known it fail in destroying Dandelions and Plantains on lawns and walks. It should not be entrusted to boys or women, as it burns everything it touches.

**WORKING HOURS IN GARDEN (Old Subscriber).**—The custom varies somewhat in various districts. In such a case as yours it appears desirable that special arrangements be made. As you do not wish to be "too exacting" you will have no difficulty in obtaining men who will conform to reasonable terms.

**SHERBURY ROSE SHOW** (*A Lover of Horticulture*).—We shall be glad to receive your name and address.

**DOUBLE TURK'S CAP LILY** (*Rev. F. T.*).—It is a scarce variety, but is in commerce. The flower sent is very elegant.

**EXHIBITING AT SOUTH KENSINGTON** (*W.*).—Write to Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, London, who will supply you with the information you require.

**INSECTS INFESTING ONIONS AND MANURE** (*Tyro*).—These are not true insects but Myriapods, and though occasionally injurious they are predatory in habit, devouring mites, &c. The box sent contained specimens of but one species, a small Julus, or Millipede, in various stages. The other you describe we take to be the Electric Centipede (*Arthronomus longicornis*), which is fond of wall fruit. Is it possible that the Onions have been attacked by the grub of the Onion fly (*Anthomyia ceparum*), which has escaped notice though it has done the damage? We scarcely think what you describe can be attributed to the Julus. These and similar species may, however, be destroyed by the application to the soil of diluted ammoniacal solution, about one pint of the liquor obtainable from gasworks to six gallons of water; or a free surface sprinkling of soot suits some cases.

**NAMES OF FRUITS** (*G. H. B.*).—Many Strawberries are so like each other it is difficult to name them by the fruit alone. That which you sent is probably Keens' Seedling.

**NAMES OF PLANTS** (*Jas. Sharer*).—1, *Anthyllus Vulneraria*; 2, *Pinguicula vulgaris*; 3, *Narthecium ossifragum*; 4, *Lycopodium alpinum*; 5, *Euphrasia officinalis*; 6, *Sedum villoum*. (*Judy*).—Specimens all very withered. 3 is a *Spiraea*; 4, a *Verbascum*; 5, *Thalictrum flavum*. The others we could not recognise. (*J. D.*).—*Potentilla formosa* and *Tradescantia virginica*. (*A. M. B.*).—*Lilium Martagon*. (*A. A.*).—It is impossible for anyone to name such imperfect specimens. (*F. G.*).—8, *Sedum oppositifolium*; 4, *Campanula pulla*; 6, *C. pumila* alba. The other specimens were insufficient. (*Inquirer*).—The specimen was too shrivelled to be recognisable. (*A. C.*).—1, *Spiraea japonica*; 2, *Phytolacca decandra*; 3, *Lysimachia vulgaris*; 4, *Deutzia crenata flore-pleno*. The other specimens were too withered to be identified. (*G. O. S.*).—*Campanula Trachelium*, *Lathyrus latifolius* variety. (*W.*).—*Populus alba*. (*E. D. B. Corford*).—We cannot name plants without flowers. You do not even state the colour of the flowers. (*F. H.*).—*Deutzia crenata flore-pleno*. (*L. M. A.*).—*Staphylea pinnata*. (*Willdenow*).—We cannot recognise the spray in its shrivelled state. If you can send us a flowering specimen we will endeavour to name it for you. (*G. P. Hamis*).—Good flowering specimens should be sent to our office, the numbers being attached so that they can be seen without untying the ligatures. The specimens should arrive in a fresh state, not more than six being sent at a time. (*J. Henshaw*).—It is the York and Lancaster.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### THE ROT, COATHE, OR BANE IN SHEEP.

(Continued from page 97.)

In a wet season—when it has been likely to produce coathe in the sheep, and when they have been feeding upon gross and unhealthy herbage in the autumn months—we adopted for several years upon a farm under our agency, situated near the sea coast in a southern county, the plan of several changes of pasture and food for our breeding flock of ewes during the twenty-four hours. The first thing in the morning the ewes were driven to a salt marsh—that is, pasture land reclaimed from the sea; about ten o'clock they were removed to pastures containing coarse herbage on wet and flat-lying land. In the afternoon they were removed to the arable land, and fed upon green fodder, such as trifolium or vetches, clover, mustard, &c., and allowed to remain there for the night, and again fed on the salt marshes in the morning. In this way we kept our flock healthy and sound, and we can recommend this practice to the home farmer under any circumstances; for the points to be observed are, that when feeding on doubtful and unsound meadow land they should not be allowed to remain there night and day, although there may be an abundance of grass, but they should have a change of food once a day (the produce of the arable land), and lie thereon at night. This treatment naturally raises a question where no salt marshes are available as to the best method of proceeding, and even then the answer must be a qualified one, seeing that a breeding flock must of necessity be managed differently in various respects as compared with a flock that is kept fattening for the purpose of producing mutton.

In maintaining a breeding flock in full health the pastures will have to be considered, and it often happens that some portions require to be drained, and this on the home farm can generally be done by consent of the owner when the necessity is explained. In the case of tenants, however, it becomes a different matter, for if the landlord will not drain the land the tenant must incur the expense or leave it undrained, and this is just the position of large tracts of pasture land in almost every district in the kingdom. If a breeding flock is kept under such circumstances

it should be quite understood as being done in such seasons as last year and at present by running a great risk of coathing the stock. Where no salt marsh pastures are at hand the question of distributing salt water where it can be obtained, or water with salt in solution, applied by a common water cart with spreading trough, will arise, and this is often done with effect on pasture land lying high and dry. If salt cannot be conveniently applied with water it may be sown over the land by hand in its natural state. Upon the worst and undrained land or parts of pasture with inferior herbage growing, and a moderate dressing of 3 or 4 cwt. per acre, and the like quantity of superphosphate, it will not only improve the herbage but tend to make it more sound and healthy feeding for sheep and cattle, and destroy or render innocuous any fluke entozoa which may be present.

After alluding to the livers of sheep being affected and the fluke found in them, it by no means follows that we cannot have sheep suffering from rot without flukes being present, because the liver is often subject to disease. No doubt the fluke in embryo will only live and breed in the animal under the natural conditions of their existence—a diseased liver or organism, and that as we have shown in our own practice sheep being fed upon unsound meadows may yet not suffer from the fluke parasite by reason of the changes of their daily food being of a healthy nature. It seems to be one of the most natural questions to ask how the fluke entozoa comes upon the pasture land, and particularly when it is found only upon soils where the water lies stagnant. This is well explained by various veterinary professors and physiologists, but we cannot give it in *extenso*, because our object is to give in a practical form sufficient to guide the home farmer in his daily management of the flock. All the authors who have written upon the subject during several centuries have had very different opinions upon certain parts of the subject; they, however, agree in a remarkable manner as to the feeding in water meadows being unsafe for sheep except after the month of May and down to the month of October, the spring growth of grass being quite safe food. There is, however, strong evidence in favour of not feeding sheep on any grass in the autumn too closely, it being related that a whole flock of sheep feeding in some meadows in Devonshire were coathed except four animals, and these were found to have the malformation of the jaw called pig mouth, and from the under jaw being much shorter than the upper they were not able to bite so near the ground. Now this fact may well teach us a lesson not to allow the sheep to eat the grass too short, in a wet season at any rate, and also that if convenient it would be better for bullocks to be fed off it, as they are known not to feed so closely as the sheep. In this way it is not at all more reasonable to suppose they are able to feed on certain pastures without injury when unsafe for sheep.

Various theories have been started as to the production of rot, but all agree as to the agency of moisture in producing the disease. Some consider that it is produced by marsh miasma—by emanations proceeding from decaying grass and the soil, and entering the system by means of the lungs. There is also the opinion that the disease is to be attributed to the taking into the system of a superabundance of watery food, thus surcharging the body with aqueous matters and diluting the blood. The last two causes may well be the means of producing a diseased liver, but in accounting for the flukes found in it we must also refer to another theory—viz., that the eggs of the fluke being deposited with the dung from sheep affected with the fluke, and preserved from destruction by warmth and moisture, and are swallowed by other sheep feeding on the grass. It is, however, of but little importance to the practical farmer how they originate, and so long as he knows where the fluke entozoa are to be found, and under what conditions of soil and climate they exist, it is enough for him. He is then sufficiently armed to know how to defend his flock against the enemy if he will carry out practically the means of escaping them. This has been our endeavour throughout our treatment of the subject to show how the disease may be avoided, seeing that it cannot be cured.

It is, however, of the utmost importance that the home farmer should be acquainted with the symptoms attending this disease, which at first are by no means strongly marked. There is no loss of condition, but rather the contrary apparently; indeed, sheep intended for the butcher have been purposely coathed or rotted in order to increase their fattening properties for a few weeks. This practice was adopted by Bakewell, the celebrated breeder of Leicester sheep, who made enormous prices of his sheep for the purpose of breeding. It was done to prevent sheep sold to the butcher being held over for breeding, and thus compete with his own stock. The usual symptoms of coathed sheep are a pale and dejected countenance, and upon parting the fleece the skin is found to have changed its vermilion tint for a pale red, and the wool being easily separated from the pelt. As the disorder advances the inside of the eyelids becomes almost white, and afterwards yellow; symptoms of droopy often extend over the body, and in the latest stage of the disease a large swelling under the jaws filled with water often occurs. Large numbers of sheep in an unsound state were sold last year, and are likely to be so this year; we therefore advise that extreme caution should be used in



buying sheep. Many sheep are in low condition this year through scarcity of food in the spring, and the circumstance should always raise a doubt in the mind of the buyers, as unsound animals may be passed off as having been badly kept and managed. In order to secure the purchaser he should know the district from whence the sheep were brought if possible, and as a further security the seller should be asked for a written warranty of their being sound. This has been our practice for many years, and on our drawing a cheque in payment we have added the words, "for sheep of a certain breed warranted sound," and made payable to order.

Having now taken up nearly all the practical points in favour of the home farmer we can only refer him for further information if required to an exhaustive article by Professor Simonds in vol. xliii. of the "Journal of the Royal Agricultural Society of England;" and also to a work by W. C. Spooner, M.B.V.C., on the structure, economy, and diseases of the sheep.

#### WORK ON THE HOME FARM.

**Horse Labour.**—This has proceeded with more effect since the favourable change in the weather which occurred about the 23rd of July, and at those times when the horses were not employed at hay carting they have been drilling some Scotch yellow hybrid turnips in consequence of being unable to get the horses upon the land during the best season for drilling Swede seed—namely, from the 7th of June to the 1st of July. The hybrid turnips partake of the nature of Swedes to a certain extent, and although they grow much faster than Swedes yet they stand the winter well, and often prove the only substitute for them. This variety of turnip is better for feeding in the spring than in the autumn, for unless they are thoroughly ripe and full grown they have an acid taste, and it is some time before the sheep or cattle take to them if fed early unless they are previously pulled and allowed to lie on the land for a time or stacked in heaps. Up to the 24th of July no work could be done with advantage upon the mixed soils in fallowing or preparing for turnips. The land had been so thoroughly soaked and the rains so continuous that the horses during a long interval could only be employed in odd work, such as carting earth to heaps and carting dung to the fields, where it will be required for laying out for wheat. As a rule, however, we do not recommend the home farmer to make up heaps of manure a long time before it is required for laying out, spreading, and ploughing into the land. We therefore advocate the laying-out of manure on to clover seeds in the winter months, as the manure goes so much farther if laid out fresh from the farmyard or cattle and pig pens. Although it proves a long time before the wheat land is ploughed for sowing, yet it has improved the clover crop, and thereby improved the land for wheat; because it is a well-ascertained fact that the increase of the roots of clover is a clear gain as manure for the wheat crop. After the land has been ploughed and pressed the gradual decay of the clover roots yields a valuable assistance to the wheat from seed time until harvest, or in case the land is sown with oats it has the same effect upon the yield of grain. The odd horse has in most soils been unable to effect the interculture of root crops by horse-hoeing. In most cases the fields sown with root crops are in a very foul condition, and a considerable extent will be lost entirely by being ploughed up or remain to produce less than half a crop. In a season such as we have passed through turnip sowing has been so much delayed that it becomes a very important question how late turnips can be sown with a prospect of a fair crop. To some extent this is a question of soil, of climate, and the manure applied. It is likewise important to sow the variety of turnip best adapted for late drilling. There are several varieties recommended by the seedsmen, but it is the province of the home farmer to consider the matter, and select not only the quickest-growing variety but also that which will maintain itself during winterly weather. The six weeks small white turnips are often sown very late, and they will often yield a good deal of food without hoeing, because they will grow very close together, and although the bulbs may be small in size yet numbers tell the same as in garden culture. This variety may be sown after the middle of August; but before that time the best we can recommend is the Grey Stone. These will not only grow very quickly but they are very good for stock, and will maintain their feeding value without rotting during the winter months.

**Hand Labour.**—Both men and women will still be employed in connection with haymaking, because in all the late districts of the kingdom the pasture grass will be now being cut for hay, and upon the arable land the second cutting of clovers and Italian rye grass upon the early and warmest soils will be ready for the mowing machine in a few days. There will be, however, according to present appearances, plenty of time for completing the hay harvest before corn harvest commences. We must again, as we have often done before, call attention to the saving of labour during harvest by getting all the straw ready drawn for thatching the corn ricks. Especially will it be necessary this year, the harvest being so late, that every day's labour which can be saved during the harvest will prove of more than usual consequence. The flocks of down ewes lately purchased for the purpose of breeding lambs to be fattened off early must have

the rams turned in with them. The Cotswold ram is often used for the purpose, for they not only afford more lambs in number but they come early to maturity. These are two very important points to be considered by the home farmer. If it is desired that the ewe should offer to the ram as early as possible they must be kept upon a generous diet, and at least two changes of food per day are quite necessary, from grass to green fodder crops or from pasture to saintfoin, or to early-sown tall rape, which is one of the best kinds of food. If any other food is required besides grass or vegetables cracked beans are best, as they not only keep the ewes healthy but induce them to offer early to the ram. The summer-grazed cattle, whether heifers or steers or whether barren cows or oxen, if well fed on good grass will now be nearly ready for the butcher, especially if they have had cake or cracked beans, either of which will have answered a good purpose during the late rainy season.

#### KERRY CATTLE.

WHEN the many points of excellence of the Kerry cattle come to be more generally understood there can be little doubt they will become general favourites, not merely as fancy stock but as really valuable animals both for the dairy and butcher. For cattle to be really profitable in these days of close competition with the markets of the whole world they must fatten quickly as well as give milk abundantly which will yield cream and butter at least up to the Alderney standard in quantity and quality. I have seen enough of the Kerrys to enable me to say they do all this and more, for they are equally superior to other breeds in hardiness and in the consumption of coarse rough herbage usually left untouched.

I have only what may be termed the nucleus of a herd—a bull and three cows—under constant observation, but these answer so well that I hope gradually to get enough of them to be able to dispense with a herd of mixed breeds—Shorthorn, Alderney, and Sussex. These three cows were out in all the rough cold weather of last winter, and like a Shetland pony, apparently prefer an open pasture to a snug shed. I happened lately to go past the cows during a heavy shower and was amused to find the Kerrys quietly grazing in the open, while the other cows were all huddled together for shelter under some trees. This hardiness, together with the lesser quantity of food required by such small cows, enables one to maintain from a third to one-half as many more of them in excellent condition upon a given area of land than one could of the larger breeds. This holds good especially upon light thin soils where heavy crops of grain, roots, or grass cannot be had without a preparatory equivalent in the form of heavy dressings of manure, rendering the maintenance of a herd of Shorthorns an expensive and exceedingly doubtful business. Notwithstanding this indisputable fact young Shorthorn stock generally commands a ready sale at high prices in the very midst of "the poor farms of Sussex," yearlings in some instances last autumn actually selling at from £17 to £19 per head at auction sales at which I was present. If the buyers had secured a couple of Kerrys at the price given for one of the larger animals, and been equally prudent in other matters, one might not subsequently have heard quite so much about "hard times."

Breeders of Kerry cattle will do well to remember how much depends upon careful selection now. We have already an abundant yield of rich milk, a sleek and lusty condition without high feeding, a robust and hardy constitution, and I believe I may add beef of such excellence as to be specially sought after by connoisseurs. If to this we can add that boast of the Shorthorn breeder, ripeness for the butcher at the age of two years, then, indeed, may we claim to have taken a step in the right direction in the cultivation and improvement of a neglected breed of cattle about which it was written full thirty years ago:—"The cow of Kerry is truly a poor man's cow, living everywhere hardy; yielding for her size abundance of milk of a good quality, and fattening rapidly when required."—EDWARD LUCKHURST.

#### POULTRY SHOW SCHEDULES.

WE have a number of schedules before us of late summer and early autumn poultry and Pigeon shows, most of them in connection with agricultural or horticultural exhibitions.

The Staffordshire Society this year holds its Show at Wolverhampton on September 18th and 19th.

The old-established Halifax and Calder Vale Association holds its one-day Show on August 30th in the grounds of Craven Lodge, Halifax. The prizes for poultry and Pigeons are not large, but there are many cups to be awarded. The classification is good and the entry fee extremely moderate—viz., 8s. per pen. The classes for poultry which must all have been bred in 1879 are thirty, of which no less than eight are for Game and five for Game Bantams. Pigeons to be shown singly have thirty-four classes. We are glad to observe that the Society has a class with good prizes for mules and donkeys. Entries close on August 16th.

The Cheshire Agricultural Society publishes a good schedule for its Exhibition of poultry to be held at Cheshire on August

29th and 30th. There are twenty-three classes with good prizes. A dog show will be held in conjunction with it.

The Bicester Agricultural and Horticultural Society offers sixteen classes for poultry and five for Pigeons at its Show to be held at Bicester on September 8th.

The Guildford Agricultural Society will this year hold a Show of cattle and horses at Guildford on September 9th. This Show has hitherto been combined with that for fat stock at Christmas.

The Surrey Columbarian Society has in consequence of the very late and unfavourable season for rearing Pigeons decided to postpone its August Show of young birds till the winter. Its last race for Homing birds of the year will be from Reading on the 27th inst.

### BIRDS IN THE LONDON PARKS.

THIS extraordinary season seems to have influenced the habits and migrations of birds. It has been generally observed that the London parks and squares have through the season been strangely devoid of their usual feathered tenants, especially the Hirundines. So striking has their absence been that a leading article of the *Standard* was lately devoted to the subject, in which we read, "The London parks in summer are a favourite haunt of the British Hirundinaceæ. The water—always more or less stagnant—attracts swarms of gnats and other such insects, and the gnats attract the Swallows. Round the Serpentine, indeed, and over the ornamental water in the Regent's Park, Swallows are usually as numerous and almost as tame as Pigeons in Westminster Palace Yard, and there is hardly a Londoner so unobservant that he cannot foretell the weather for the next few hours by the Swallow's flight. This year, however, the prettiest of our summer visitors is beyond all question exceptionally late." There follows an interesting comparison of the dates assigned by various great naturalists for the probable arrival of the Swallow in England. Yarrell gives the 10th of April for the mean period of its arrival; Mr. Davy, a great professional London bird-catcher and fancier, "the middle of April." Our observation certainly leads us to agree rather with Davy than Yarrell. We have been surprised to observe that in central Italy the Swallow does not arrive more than a week before it reaches our shores.—C

### VARIETIES.

HAVING recently travelled through several counties where the storm of Saturday night was the most severe we can testify to the desolation that has been wrought by its dread intensity. We have seen villages submerged, roads converted into rivers, and fields into lakes; tons of hay floating and rotting, corn flattened never to rise again and yield of its increase, trees split, glass broken, and railways blocked by landslips. The loss must be great and to many almost unbearable. Agricultural prospects appear to become more gloomy as the season advances and harvest approaches, if indeed there is a harvest at all in some of the latest and wettest districts during this memorable season of 1879.

—THE antiquity of the breeds of fancy Pigeons is an interesting subject. We have lately seen a Venetian mosaic, which can hardly be later than the fourteenth century, of a Pigeon feeding its young one. They are both unmistakeably Trumpeters of the unimproved type.

—THE serious outbreak of typhoid fever among swine in the south of England has extended to Cheshire. Mr. Joseph Furber, Ansterson Hall, near Nantwich, has lost seven out of his herd since Monday, and has six others which are not likely to recover. The dead pigs have been buried in quicklime, and the others duly isolated.

—THE *Toronto Telegram* of July 12th says—"The reports of the crops as they appear in the *Globe* are said to be far brighter than the facts warrant. We understand that in some quarters fall wheat will be but a half crop, and that in other grains the prospects are not nearly so good as the *Globe* has painted them. The present is the critical moment. If the wet weather continues it will do the crops great harm. The reports from the United States are very favourable. The crops garnered have been unusually large. In England continuous rains have seriously interfered with the crops, and the prospect is said to be a very blue one if not actually ruinous. The ill wind there will blow good to the farmers here, and if the crops turn out well the farmers here will all make money, and times will begin to brighten again."

—WE are requested to state that the closing time for entries to the Northampton Agricultural Show is August 9th. The Show will be held on August 19th and 20th.

—MR. J. P. SHELDON writes to the *Times*:—"The price of milk is a matter which is now receiving a good deal of attention in the Press of this country. Mr. Read was not overrating the case when he said farmers would be glad to receive 6d. in the summer and 8d. in the winter per imperial gallon for their milk. They certainly would pay their way at these prices, providing

they made no bad debts and were not bound to supply a given quantity of milk in winter. But in order to sell his summer's milk he is bound to supply a given quantity in winter, when milk is scarce; and, as every dairy farmer knows, the production of milk in winter is a costly operation. At the present rate of rents, wages, &c., while 6d. a gallon in summer is barely a rent-paying price for milk, 8d. in winter is wholly inadequate where the farmer has to supply a quantity corresponding to his summer production. At the same time there is not now and has not been any solid reason why the public should pay 5d. per quart—this is the price a boy, whom I stopped the other day in one of the suburbs of the west of London, told me he sold his milk at. Fourpence a quart the year round would afford ample profit to the retailer, who now pays as follows for milk delivered at the London railway termini:—April, May, June, 1s. 4d.; July, August, September, 1s. 5d.; October, November, 1s. 8d.; December, January, February, 1s. 9d. per barn gallon of 17 pints. By charging exorbitant prices the retailers are hindering the development of a trade which would rapidly increase, benefiting alike the farmer, the dealer, and the consumer.

### THE FERTILE WORKER BEE.—No. 5.

I STATED that the careful following-out of a series of experiments with a definite object would prove, even to those beyond the novitiate stage of bee-keeping, a capital plan to learn by experience facts that otherwise might escape their notice; and that, when least expected, one of these facts noted during the experimental period would materially assist in the proper and rapid diagnosis of any event occurring in the apiary of a puzzling character.

I said that I had just met with a case in point. One of my stocks that had been very strong all through the winter I noticed in March had an excessive quantity of drone brood; again, April 14th, I noted the same; but in other respects the colony was in good order, had an abundance of brood in all stages.

April 30th I proceeded to examine it, hoping to find it quite ready to yield me an artificial swarm.

I have narrated how I found two drone larvae in the royal cells constructed in the fertile worker hive. Now those two-drone royal cells were excessively elongated, so much so as to cause me some surprise. The first frame I lifted out of the above-mentioned hive had queen cells, but of such an inordinate length as at once to attract my attention. These royal cells resembled those in the fertile worker hive!

Something wrong here, I thought.

Proceeding further I found the population of drones excessively great, and an enormous amount of drone brood. I at once decided that the hive had either a drone-laying queen or a fertile worker. Seeing the quantity of hatching-out workers still left, I felt very soon convinced it was not a case of fertile worker but that of a drone-laying queen; but then the quantity of royal cells—such numbers! This raised the suspicion in my mind that the queen worn out had taken to laying drone eggs, and had then either died of old age or been killed.



Fig. 15.



Fig. 16.

Examining carefully I found my conclusion correct, for in a knot of bees on the floorboard I found the queen dead, showing all the signs of death by suffocation, one of the principal of which is that the colour changes to a glossy black. Her wings also were completely bitten away; evidently she had been harried to death, the bees instinctively seeing the colony had no chance of existence if she were suffered to remain at its head.

Now, assuming I can at once proceed to save that colony, you will perceive how by the observation of the particular shape of those two-drone larvae queen cells in the experimental fertile worker hive, I was led at once to thoroughly examine, and come to a conclusion as to the cause for these inordinately lengthy royal cells.

I do not know if royal cells of such length are often met with, so I post five of those cells intact for them to measure, and repre-

sent by woodcut if they so desire or consider sufficiently interesting. I also send drones of the North African variety hatched out of the fertile workers' eggs, also Italian workers hatched in that fertile worker hive from the comb of brood given. The Editors will therefore be able to see and substantiate the vast contrast in colour, and the great facility marked difference of variety gives for experimental purposes. I send also the queen of the hive from which those long royal cells come. They will note how polished her body is, the absence of wings, &c.—ARTHUR TODD, *Blidah, Algeria*.

[By the kind permission of the Editors I have examined these extremely interesting pseudo-queen cells with attention, and find that whereas the normal cell has an average of scarcely more than nine-tenths of an inch in internal length, that represented in fig. 15 similarly measured is an inch and one-fifth, and that in fig. 16 is hardly less than an inch and one-third. Such cells as these are very unusual; but similar, although I believe shorter ones, I had the opportunity of exhibiting at one of the British Bee-keepers' soirées. These also were abortive, and were in like manner the result of an attempt on the part of the bees to raise queens when their colony was being ruined by a fertile worker.

The dead queen referred to by Mr. Todd has lost nearly every hair from the abdominal rings and almost all from the thorax, while the wings are nibbled down to the roots. My experience leads me to more than doubt the theory of Huber and Dzierzon, that the fertile worker is raised in a cell adjoining the queen cell, receiving as part of her nourishment some of the royal pabulum, which thereby in some unknown manner partially metamorphoses her and gives her the power when born in a queenless hive of taking upon herself queenly functions. Twice I have had fertile workers appear immediately after removing a queen in hives which had never, so far as I had evidence or so far as the combs gave evidence, even attempted to commence queen cells. Mr. Todd gives my opinion exactly when he says, "The power to produce eggs was latent up to the time I made the colony queenless; then finding herself [the fertile worker] in a hive with no queen, the desire to be up and doing brought forth the latent power." In fact in other insects that occurs which enforces and illustrates this opinion. Thus the termites of Brazil produce winged males and females, which early in the warmer season fly abroad and mate with new blood, fulfilling the law which we see observed in the bee hive. If some of these fecundated females return to the nest (and any of these are welcomed whether strangers or not), all is well, but should none return and the continuance of the colony become thus endangered, imperfect females mate with males with undeveloped wings within the nest; the former lay and perpetuate the life of the colony, although the advantage of new blood is denied it. Here we have the counterpart of the fertile worker. The undeveloped female under a stimulus similar to that supposed to exist in the queenless hive becomes a true but inferior mother. In the case of the fertile worker the drone performs no part, for a reason which I believe I have discovered, and so parthenogenetically the fertile worker gives males only. Amongst flowers even we see the same law in operation, some plants producing late in the year closed blooms which must be fertilised with their own pollen; so that seeds failing where alien pollen has been demanded others are certainly produced, although of inferior power, by self-fertilisation. There is a oneness in all nature which constantly gives the answer to a difficulty in one place by a fact in another.

Mr. Todd says, "Cells containing five, six, and even more eggs I have come to regard as an unmistakable proof of the presence of a fertile worker." Mr. Todd would no doubt, keen observer that he is, allow that there is one exception which had better be pointed out for the benefit of the learner. A good queen, being taken from a strong stock and put with a nucleus where she has but a small number of cells in which to deposit her abundant eggs, will often deposit several in each cell, and a young queen raised in a nucleus will very generally do the same thing, these exceptions proving the rule.—F. CHESHIRE, *Avenue House, Acton, W.*

### REVIEW OF BOOK.

*Manual of Bee-keeping.* By JOHN HUNTER. Third Edition. London: David Bogue.

THE need for and acceptability of this manual has been attested by its passing into a third edition, which is brought up to date by considerable alterations and additions. Amongst these we have a chapter on comb foundations, in which this modern achievement, as important in its results as the extractor, is well treated and illustrated, while the author takes his readers into his confidence and becomes a revealer of secrets as to costs and value in a manner not likely to evoke the gratitude of the trader. Supers as we now have them in sections with separators receive due attention, while the chapter on artificial swarming is fuller by much than that previously given. The book is eminently readable, and may be accepted as a reliable guide in the varied operations of the modern apiary.

The increased attention given to bee-keeping during the last

few years has, however, brought some books into the market which could well have been spared. Amongst these we think may be classed "A Manual of Rational Bee-keeping," by C. De Ribeaucourt, translated from the French by Arthur F. Leveson Gower. Here, generally speaking, the methods advocated would in this country be regarded as obsolete, while the advice often shows but a very flimsy acquaintance with the matters treated. In these days, when the British Bee-keepers' Association's tents show the operation of driving in the presence of multitudes of would-be bee-keepers before whom never more than a few minutes are occupied in getting rid of the bees, a book which says that "after beating upon the side of the hive for an hour and a half if no effect is produced the process had better be repeated next day," is sure to be little read and less followed.

### OUR LETTER BOX.

**HEXAGONAL SHED (F. A. W. W.).**—The cost of this will vary in different localities, as the materials vary in cost, &c., in different districts. An estimate from a local builder is the best way to ascertain cost, together with dimensions of timber, planking, roofing, &c. The brickwork at the bottom should be made about 1 foot above ground level, and 1½ foot below, in order to allow for excavating earth for the floor to be filled with ashes, &c.

**BONE-CRUSHING MACHINE (F.).**—Write to Messrs. Wedlake & Co., 118, Fenchurch Street, London, E.C.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 33' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain.
1879.	Baromet- ter at 32° and Sea- level	Hygrome- ter.		Direction of Wind.	Temp. at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
July.		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
Aug.											
We. 30	Inches.	deg.	deg.	W.N.W	deg.	deg.	deg.	deg.	In.		
Tu. 31	29.906	72.7	65.7	S.E.	80.3	58.3	120.3	52.3	0.020		
Fri. 1	29.916	65.6	63.4	S.W.	82.6	73.0	107.3	61.6	0.234		
Sat. 2	29.944	64.5	62.8	S.	81.8	76.4	130.0	56.6	—		
Sun. 3	30.150	64.5	62.7	S.E.	81.2	73.2	124.3	46.8	0.142		
Mon. 4	29.322	63.5	60.8	S.E.	81.0	74.0	96.1	54.3	—		
Tu. 5	29.941	65.4	61.4	S.W.	81.1	69.7	113.7	53.6	—		
Tu. 6	29.949	62.2	57.3	S.W.	80.2	62.0	116.7	47.3	0.118		
Means	20.988	65.5	61.3		81.3	73.9	56.3	116.9	53.3	0.514	

### REMARKS.

- 30th.—Very fine hot summer day; cloudy evening, few spots of rain about 10 P.M.  
 31st.—Slight rain and close damp morning, continuing very dull and heavy until 4 P.M. when it became clear and bright; very fine evening.  
 1st.—Heavy rain in night; close damp morning, fine bright afternoon and evening; moonlight night.  
 2nd.—Very fine bright day; cloudy evening, slight rain 6.45 P.M.; lightning in west from 10 P.M. and from 10.30 P.M. brilliant in N.W. and S.W.  
 3rd.—Lightning continued with increasing frequency, and thunder was heard at 0.15; rain began at 1.36 A.M., and the storm disappeared about 3.30 A.M.; very close morning, but fresher in evening.  
 4th.—Damp and dull morning, afterwards very bright and fine.  
 5th.—Very gloomy and dull; rain commenced 6.16 P.M., continued till 9 P.M.; fine afterwards.  
 The warmest week this year, being at last slightly above the average temperature.—G. J. SYMONS.

### COVENT GARDEN MARKET.—AUGUST 6.

TRADE is quieter, the bulk of the soft fruit with the exception of Red Currants having reached us, and prices show a downward tendency. Vegetables are in good supply.

#### FRUIT.

	s.	d.	s. d.		s.	d.	s. d.
Apples.....	½ sieve	0	0 to 0	Melons.....	each	3	0 to 6
Apricots.....	dozen	2	0 3	Nectarines.....	dozen	3	0 8
Cherries.....	box	0	6 1	Oranges.....	½ 100	4	0 12
Chestnuts.....	bushel	12	0 16	Peaches.....	dozen	8	0 13
Currants.....	½ sieve	3	6 4	Pears, kitchen.....	dozen	0	0 6
Black.....	½ sieve	4	6 8	dessert.....	dozen	0	0 0
Figs.....	dozen	3	0 8	Pine Apples.....	½ lb	2	0 4
Filberts.....	½ lb	0	9 1	Pistons.....	½ sieve	0	0 0
Cobs.....	½ lb	0	9 1	Raspberries.....	½ lb	0	2 6
Gooseberries.....	½ sieve	2	3 6	Strawberries.....	½ lb	0	6 1
Grapes, hothouse.....	½ lb	1	6 4	Walnuts.....	bushel	0	0 0
Lemons.....	½ 100	4	0 8	ditto.....	½ 100	0	0 0

#### VEGETABLES.

	s.	d.	s. d.		s.	d.	s. d.
Artichokes.....	dozen	2	0 to 4	Mushrooms.....	pottle	1	6 to 2
Asparagus.....	bundle	3	0 6	Mustard & Cress.....	punnet	0	2 0
Beans, Kidney.....	½ 100	1	0 1	Onions.....	bushel	2	6 4
Beet, Red.....	dozen	1	0 2	pickling.....	quart	0	4 0
Broccoli.....	dozen	0	1 8	Farsley.....	doz. bunches	3	6 0
Brussels Sprouts.....	½ sieve	0	0 0	Fennel.....	dozen	0	0 0
Cabbage.....	dozen	1	0 2	Peas.....	quart	2	0 3
Carrots.....	bunch	0	4 8	Potatoes.....	bushel	3	6 4
Cauliflowers.....	½ 100	1	6 2	Kidney.....	bushel	4	0 5
Celery.....	dozen	3	0 6	Radishes.....	doz. bunches	0	0 0
Coleworts.....	doz. bunches	3	0 4	Rhubarb.....	bundle	0	0 6
Cucumbers.....	each	4	1 0	Salsafy.....	bundle	0	9 1
Endive.....	dozen	1	0 8	Scorzoners.....	bundle	1	0 0
Fennel.....	bunch	0	8 0	Shallots.....	½ lb	0	3 0
Garlic.....	½ lb	0	6 0	Spinach.....	bushel	2	6 4
Herbs.....	bunch	0	2 0	Turnips.....	bunch	0	6 8
Leeks.....	bunch	0	3 4				

## WEEKLY CALENDAR.

Day of Month	Day of Week	AUGUST 14—20, 1879.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.							
14	TH	Maidenhead and Tamton Horticultural Exhibitions.	72.9	50.8	61.8	4 46	7 34	0 30	5 39	26	4 32	206
15	F	Worceley Horticultural Exhibition.	73.1	50.0	61.6	4 47	7 33	1 40	6 10	27	4 31	207
16	S		73.0	51.5	62.3	4 48	7 30	2 56	6 34	28	4 9	208
17	SUN	10 SUNDAY AFTER TRINITY.	72.7	50.1	61.4	4 50	7 18	4 17	6 53	29	3 57	209
18	M		73.3	50.7	62.0	4 51	7 16	5 37	7 10	1	3 44	210
19	TU	Northampton Horticultural Exhibition.	73.1	49.2	61.3	4 53	7 14	6 59	7 36	2	3 31	211
20	W	Burton-upon-Trent Show.	72.9	50.6	61.7	4 55	7 13	8 23	7 43	3	3 17	212

From observations taken near London during forty-three years, the average day temperature of the week is 73.0°; and its night temperature 50.6°.

## THE WEATHER AND ITS EFFECTS.

**B**ITTERLY cold and unusually long winter has enabled us to test the power of endurance which some of our pet plants have exhibited, resisting all the attempts of Jack Frost to kill them; and now a wet cold summer shows us what plants in the flower and vegetable gardens delight in the prolonged down-pour of almost unceasing rain. An article in the *Times* of last week on the general state of things in the farms and garden was evidently written by someone who had gone out for a day's pleasure in the country and had met with nothing but "water, water everywhere," and downhearted farmers and lugubrious gardeners, and then came home, overwhelmed with dampness of spirit, to vent his dejected thoughts in a dreary account of what he had seen and heard, written off to the *Daily Thunderer*. Things are no doubt very bad; but I must say I, for one am not sorry, but thankful to have wall-fruit trees, for they are laden, some of them, with a very respectable crop of fruit. I never had so many Apricots, nor more Peaches, nor so good a crop of Pears. I had two years' supply of Plums in one last year, so I did not expect many this, and consequently there is no reason to be disappointed in seeing the trees with scarcely any fruit on them. Cherry trees are on one wall cropped heavily, on another equally heavily blighted. The west aspect is a success this year, the due north a failure. Black Currants abound, notwithstanding a large destruction by blight; Raspberries are plentiful, and Strawberries have not been so abundant for years.

Perhaps the best way to judge of the fruit year is to take a glance at the jam cupboard; if so, according to the report of the housekeeper, it is an unusually good year for jam; but later on she will sigh over the absence of Plums, which last year were so numerous that she got tired of them, and our good friends and neighbours profited thereby. I find the Siberian Crab one of the most uncertain bearers. I have a fine tree on the lawn, and sometimes it is loaded with fruit, which are both delicious as a preserve and most beautiful for decorative purposes. They look like Cherries with a lovely bloom upon them, and the church decorators at the harvest festival are always much disappointed when they cannot get them. This year there are certainly none, though the tree flowered well; there were none last year and but few the year before, so let us live in hope that Siberian Crabs will be plentiful next year.

The poor farmers of this district, where there is but little arable land and hay is the great summer harvest, thought in May that they should at all events have large crops of Apples, for the immense orchards about here never looked so beautiful as they did in that month, when the branches seemed almost weighed down with the burden of blossom alone. Then, too, there was a general impression that the blossom, coming as it did about a month later than usual, was sure to be unusually productive. But, alas! all the hopes of spring are falsified by the event, for a worse year for Apples was never known. There

will be little of the famous Gloucestershire cider made this year.

I remember a quaint old farrier in the far west used to say, "You must doctor an 'oss just as you would a Christian." But if men and horses bear the same treatment it is quite certain that the weather which suits human life is bad for the vegetable creation: never has the church bell tolled so seldom for the funerals of my parishioners as during this wet summer. It has been evidently cool and healthy. The cold winter carried off the aged—over a hundred years one of them—but this cool wet summer has suited all. The same thing may be observed throughout the country.

With regard to flowers, I notice that Clematis Jackmanii is very good, loaded with a quantity of bloom; it is always an abundant bloomer, but this year it is unusually fine. Then one has had no trouble in watering even the Marie Louise Violets, which generally require constant attention; and all the subtropicals, except some specially delicate plants like *Draecena terminalis*, have rejoiced in the abundance of moisture. The huge leaves of *Ricinus* are stronger than ever, and Cannas are very beautiful.

The large stately Lime trees in the churchyard are at the present moment loaded with their fragrant blossoms; and the bees, which on the whole have not had a very good time of it, are rejoicingly busy now at the latter end of the season gathering honey and pollen from those sweet flowers. It has been very pleasant during the last few hot summer days to stop for a moment under the shade of the grand old trees and listen to the constant hum of bees, which are busy by thousands in the branches overhead. The quantity of honey stored away at the end of the season from Lime trees almost makes up for the want of Heather, which is, however, a still better honey-producer in the late autumn.

In speaking of the kitchen garden I omitted to mention that the only things really suffering are Cucumbers and Tomatoes. The former have had mildew, which my factotum gardener says he never saw before among his Cucumbers. Tomatoes do not set their fruit so well as desirable; they have grown well, and the last few days of sunshine have done them much good. Peas have prospered immensely; but once more Dr. Maclean is all but a failure with me, and the above-mentioned factotum says, "Us better have no more of them doctors, sir;" and I believe he is right.—A GLOUCESTERSHIRE PARSON.

## RIPENING LATE GRAPES.

It will, I think, be new to most of your readers, as it certainly is to me, to learn that I teach "the necessity of high temperature for Grape-growing during dull and sunless weather," and I fancy most people will give me credit for erring rather in an opposite direction: 55° as a minimum temperature is not usually thought high for Muscats while in flower, and I know many good Grape-growers who would not find much comfort on their pillow if they thought their houses at such a critical time were below 70°. I do not recommend much forcing till the flowers are set, chiefly

because the roots of Vines never commence growing till some of the leaves have attained nearly their full size; and in some cases, where an extremely high temperature is maintained while the roots are cold, the Vines, I should imagine, nearly come into flower before there is much root-action, and hence all the cry about Muscats and some others setting badly. Bad setting of Muscats is unknown under rational treatment, excepting in cases of accident which the best of us are liable to.

What I recommend, and what I would urge with greater force now that the long days are fast slipping away with hardly a glimpse of summer, is that Grapes which are intended to be kept through the winter should have plenty of assistance given them by means of fire heat, for the sun this season is not nearly sufficient to ripen them. To have them coloured is not enough; the temperature must be kept up to a minimum of 65° for fully ten weeks after they commence colouring, and then if the ventilation has been well attended to and all else goes on well the greater portion of the leaves as well as the fruit will be ripe. The varieties named by Mr. Peach, with the exception of Muscat of Alexandria, do not come under the heading of "late Grapes" and will ripen with ordinary treatment; but even Black Hamburgh in a season without a summer would be better for having fire heat till colouring commences, not so much for the present crop if it is intended to use it before the new year as for the future well-being of the Vine. It is not everyone who has such a beautiful light house as the one Mr. Peach describes, and in a season like the present one a light house has an immense advantage. Once again I say, Fire away, not because you like it, but because under the exceptional circumstances it is a necessary evil, and fire heat can be used more economically for ripening the wood in August than it can in October or April.

I hope some day to have a word with Mr. Peach as well as with "A NORTHERN GARDENER" about pruning and pinching, or rather, what it must come to, "extension *versus* restriction." I am extremely pleased to find a fundamental point of difference between "A NORTHERN GARDENER" and myself, for some of his articles are so provokingly like mine that on looking over old numbers I feel sometimes disposed to dispute the authorship.—WILLIAM TAYLOR.

#### DUPLICATE ROSES.

"A. C.," in one of his interesting letters, advises Mr. George Paul to add to his list of duplicates Fisher Holmes and Duc de Wellington. Whilst allowing that these Roses are very similar in colour, I should hesitate to endorse "A. C.'s" opinion. I have recently spent several hours in Mr. Walters' nursery for the express purpose of discovering the difference between Roses which are so much alike as to be almost identical, and I will give your readers the result of the few notes that I made—not, indeed, on paper, but in my mind.

I must state, however, that Mr. Walters does not label his Roses except with numbers, therefore it is necessary either to be accompanied by the owner of the place or else to take the book which gives the names and numbers. As I used to go early in the morning whilst Mr. Walters was at breakfast, I took his book, and went through all the lines one by one. I never looked at the book unless doubtful as to a Rose, and I must own that at first I was bothered by the similarity of the two Roses referred to; but on looking at the wood of both Roses I found that, although the wood was much the same, the foliage was different. Fisher Holmes had a more glaucous or sheeny light in the foliage, whilst the Duke was much duller and darker. I think "A. C." will find this distinction in his plants if he will look carefully at both together. Perhaps also the blooms of Duc de Wellington are more "built up," more globular than those of Fisher Holmes.

I now come to what I may call the Lesseps family. Here we have four Roses very much alike—viz., Maurice Bernardin (the oldest), Exposition de Brie, Ferdinand de Lesseps, and Sir Garnet Welseley, the youngest and best. With the exception of this last named I for one could distinguish no difference at all between any of the three former either in the blooms, the wood, or the foliage. Sir Garnet is, indeed, quite different in wood and foliage, and is an improvement in colour, but in the majority of plants very like the rest of the family. But the other three are identical. I cut branches of one to compare with the others, and I could find not the slightest difference. I remember years ago, in course of conversation in a railway carriage on the road to Hereford, Mr. George Paul

said, "The sooner Exposition de Brie, Ferdinand de Lesseps, and Maurice Bernardin are called by one name the better. I can find no difference in them, but my budders say they can." I asked Mr. Walters his opinion, and he said, "You might cut three blooms from the same plant of any of them, and show them under the three names, and no one could discover the fraud." I then asked his son, who is the principal budder, if he could find any difference in the wood, and he said, "Not the slightest." It is time, then, that these three should be called by one name, and that men should not have to buy plants of each.

I now come to Mdle. Eugénie Verdier and Marie Finger. Mr. Walters pronounces these to be identical. The only difference I could find was in the form of the two flowers. Marie Finger is a little flatter than her sister, but the wood and colour are exactly the same.

The next Roses that force themselves upon my attention are the grandest of all Roses—Charles Lefebvre, and his young sister Marguerite Brassac. Here I own I can discover no difference at all. Charles Lefebvre is the stronger grower as it appears to me, and that is all.

I now come to Roses sent out by one of the greatest Rose nurserymen of the present time, Mr. G. Paul. Before mentioning the names of two of his Roses I must once more observe that my notes are taken from observations at one nursery. It is possible, as Mr. Walters says, that I may have cut my buds from the wrong line, and people have been in here saying that their blooms of Sultan of Zanzibar were quite different from mine. I know I shall render myself liable to being overwhelmed by the outpouring of the vials of Mr. George Paul's wrath, and a score of rosarians; but, to be strictly honest, I must say that I can only discover the slightest difference between Reynolds Hole and Sultan of Zanzibar. On comparing the two, and talking over the matter with Mr. Walters, the only difference I could find was the colour of the wood at the top of the flower stalk. Reynolds Hole is brown, while the Sultan is green. Both are splendid Roses, and I only hope I am wrong; but at Mount Radford, with the above exception, they are identical. Roses which bothered me very much, and which I could never be sure of the names, were Abel Carrière and Jean Liabaud, Lord Macaulay and Auguste Neumann. I allow that there is great difference in the wood of these two latter, but often the blooms when young and at their best are much alike. Mons. E. Y. Teas, a great gem, is somewhat like, in both wood and colour, Madame Victor Verdier. Each has white thorns, but the Monsieur is much more thorny than Madame, which is an exception to the rule in life so far as my experience goes. Dupuy-Jamain again, and Auguste Rigotard, are very similar both in wood and flower.

Concerning new Roses I was unable to make any comparisons, because Mr. Walters grows very few; but I may mention one Rose which appears to be identical with Antoine Ducher; this, I think, is called Mdle. Louise Pernet. It seems a pity that nurserymen should send out Roses which, if not duplicates, are so much alike that you require a microscope to find out the difference. Of course, for a nurseryman's seventy-two Louise Pernet, Marguerite Brassac, and Marie Finger are exceedingly valuable, but for the man who only grows Roses to decorate his garden they are useless. As the exhibition season is now over, and the demands upon your space are not so great, perhaps this letter may excite discussion, and more duplicates may be added to my already long list.—WYLD SAVAGE.

#### SCORCHING AND SUMMER PRUNING.

THE timely and instructive remarks which have appeared in the *Journal of Horticulture* as regards the effect of sun cannot but have been useful; for it is only by the most careful attention and judicious ventilation, and even slight shade, that scorching can be averted on the sudden appearance of sun. The amount of crude sap in the leaves of Vines this year is very exceptional, hence any warning is certainly seasonable. Never perhaps any season has the effect of the sun been so visible as it is this year. We have planted in an open situation a collection of the choicest sorts of Ivies, and the bright sun of the last few days has scorched them as effectually as if they had been in a glass case; also in rambling through our woods I find in open spaces, where the sun can easily penetrate, the young growths of the common Bracken and several of the Lastreas are completely scalded and burnt brown.

It will be wise to take the advantage of every opportune



occasion to advance the summer pruning of all kinds of fruit trees, so that the necessary fruit buds may be matured for next year's crop. Not a branch or shoot more than is required should be allowed to remain after this date; also every means possible should be resorted to to give Peaches on walls an opportunity of ripening, for which purpose it will be necessary to expose the fruit as fully as possible to the sun, and in no cases should more young wood be left than is necessary for next year's produce. Unless we have much better weather than we have had as yet all the horticultural skill possible will have to be exercised to produce a good crop of fruit next year.—B. COWAN.

### A NEW HEDGE CUTTER.

We have great pleasure in introducing to the notice of our readers an implement which will be regarded by many as a great boon—

as great a boon as the lawn mowers were when they superseded the use of the scythe in gardens.

There are not many who can use skilfully the hedge pruning hook or the shears; and to those who can, and especially to ladies, the labour is so great that any contrivance which will enable them to perform the work with comparative comfort to themselves, and at the same time afford a pleasurable recreation, must be a great acquisition. We have been favoured by Mr. Ridgway of Macclesfield with one of his new patent hedge cutters. We have used it, and therefore we can speak of it experimentally.

The principle of its construction and application is the same as that of the mowing machine or the horse clipper, and used in the way of the latter it performs its work most effectually and rapidly. Every action of the machine does work, and in this respect it differs from the shears, which only cuts with the closing motion. In the hedge pruner both motions do the cutting, and hence there is a great saving of labour. The implement is light to handle, acts with great freedom, and does its work thoroughly and quickly. The operator may keep on walking at a slow but constant pace, all the time working the machine and cutting the hedge. No garden establishment, however small or large, should be without one or more of these useful implements.

### TELEGRAPH AND TELEPHONE PEAS AT ORSETT HALL.

WHATEVER may be the case in other places, there is no question whatever that these two Peas are quite distinct as grown in the garden of B. B. Wingfield Baker, Esq., by Mr. Iggulden. No one being free from prejudice, and who has any practical knowledge of Peas, can after a full and fair examination of the two varieties say that they are identical. It is admitted that the dried seeds are different—Telegraph being smooth and Telephone wrinkled—and there is at least quite as much difference in the colour of the pods, the colour and appearance of the Peas when shelled, also when they are cooked, and especially so in regard to quality and flavour at table. Both are grand Peas, not for exhibition only, but for ordinary supply and culinary purposes where Peas of great productiveness are required by the gardener, and dishes of fine appearance and superior quality are coveted by the cook. Mr. Iggulden has found these Peas most valuable and has grown them extensively. Sown at the same time as William I. they form a natural succession; and the cultivator referred to, who is admittedly a competent judge, considers them to rank very highly amongst second early varieties, as they are not excelled in quality by any others and are unequalled in size.

The two varieties attain the same height and mature their

pods at the same time; indeed in growth they appear nearly identical, the only difference being that the foliage of Telephone is somewhat lighter than that of its prototype. But the pods and Peas are quite distinct. The pods of Telegraph are dark green, those of Telephone being decidedly paler—namely, a greenish white. So marked is the difference that if a number of pods of the two varieties are mixed together they can be separated with the greatest ease. If possible the dissimilarity is still greater in the case of the Peas. If both varieties are shelled into the same vessel and thoroughly mixed every almost white Pea of Telephone can be picked out with the greatest readiness from the green Peas of Telegraph. The difference in this respect is so complete that both varieties cannot be sent to table in the same dish without spoiling its appearance. At Orsett the two varieties were sown separately in two rows, and in a third row they were sown in mixture,

but from this mixed row not the slightest difficulty is experienced in gathering a dish of whichever variety is

required. When the Peas are cooked there is also an unmistakable difference in both their appearance and quality—Telegraph is smooth and green, Telephone wrinkled and white. In flavour the former is excellent, being sweet but having a suspicion of mealiness enjoyed by some palates; the latter is decidedly more buttery and sugary, and would be generally preferred by Pea connoisseurs. In this respect (flavour and quality), anyone having experience of the two Peas would certainly determine "which was which" by eating them in the dark—that is, without seeing them at all. When dishes of the two varieties are placed on the table the Peas of Telephone are seen to be larger than the other; but the most striking dissimilarity consists in form, colour, and flavour. Telephone is considered by Mr. Iggulden to yield rather more pods than Telegraph, but they are not larger if quite so large as those of that noble Pea.

The cultivator in question, who grows Peas largely and well both for exhibition and home use, intends growing these two fine varieties more extensively—Telegraph in consequence of its colour being the best for exhibition; the other on account of its quality, being preferred for the table. He thinks Mr. Culverwell deserving of high honour for raising such a splendid Pea as Telegraph, but considers that he ought to have done what Messrs. Carter & Co. have done—namely, have selected more carefully and sent out a stock of indisputable purity, which Telegraph, before it was dealt with by the firm in question, certainly was not.

Mr. Iggulden in discussing the merits of Peas, as he will do shortly, will probably refer to these amongst other comparatively new sorts, when it will be seen that he has no preference for the productions of any one firm of seedsmen over those of another, but that he forms his estimates with absolute impartiality, and after actual practice and close and careful observation.

It may, under the circumstances, perhaps be advisable to add that I am not a client of Messrs. Carters', and have no connection whatever with that firm; my only object in writing on this subject being to record, as far as I am capable of judging, what I believe to be—TRUTH.

**SLUGS—CROP PROSPECTS.**—"G. O. S." asks for a preservative against slugs. Obtain some plovers, clip their wings and place the birds in the garden. They will work successfully in devouring the slugs. My Strawberries have, as everywhere, been abundant; and the British Queen, usually so shy a bearer, is now giving me quantities weighing an ounce a-piece, and Constante promises well. We have had enormous crops of Raspberries, Gooseberries, and Currants (Black and Red); also unusually numerous Apricots and Pears. Enough of Plums,

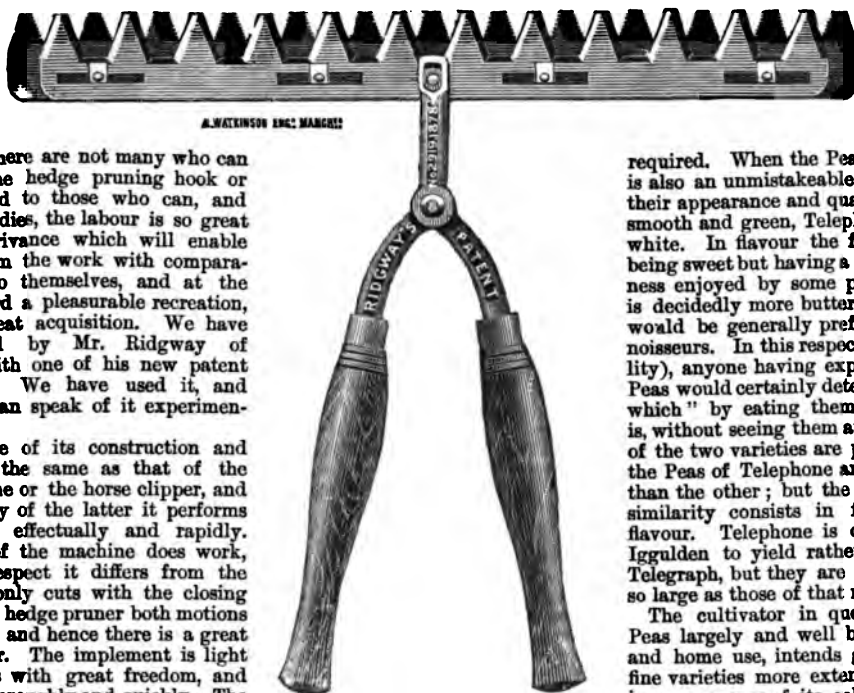


Fig. 17.

Peaches, and Nectarines. No Apples. Potatoes plentiful, and as yet without disease. Asparagus was excellent, and lasted some weeks longer than usual. Globe Artichokes were entirely killed by the frost.—G. H. V., *Retford*.

### A REAL ROSE GARDEN.

If the English people only knew what a fine country they have they would not be in such a hurry to go abroad without seeing it. Such is the reflection that has suggested itself to me as the result of a short sojourn amongst the Cotswold Hills. How little in general is known of the beauties of that part of Gloucestershire! Passengers by the Great Western Railway do look out and admire the lovely Stroud Valley; but few know that there are many other lateral valleys hardly less charming, with parks and places suddenly appearing, each in its own little wooded valley, generally with a stream through the midst offering added attractions. And the soil of these valleys is remarkable food for Roses. "Here," said my hostess, before taking me to see the real Rose garden, "here my Roses grow to please me; when we came in the valley they grew to please themselves. They could not help growing, and the colour had a depth and richness which I have never since equalled."

As the fair owner had encountered the great Cranston with a box of thirty-six, and with no inglorious issue, she could speak with authority. After this we proceeded to the real Rose garden. I had gone over the grounds as I thought up to that moment, and seen some good Roses, but not quite in that prominence which of course I had expected, when suddenly we descended the side of a hill through a fernery, and past several beautiful limpid rills, and all at once came to the door of a compact and tall walled-in enclosure. The door opened upon a sight of beauty which will remain with me a joy for ever. The whole of the interior was filled with beautiful Roses! Nothing else was allowed there, no inferior beings except some serviceable Strawberries, which there is Cheshunt authority at least for having in such a neighbourhood. The dark Rees was especially fine, though not all of the newest kinds, for since ceasing to exhibit, old friends had been more tolerated. Général Jacqueminot was in magnificence. Anna Alexieff as I have never seen it, a long hedge, which but for the usual morning rains would have been in perfection. Lord Clyde was also grand; La France of course, and various others, which it would be long to enumerate.

The plants were chiefly on the Briar, trained to long rows of wire, with rows on their own roots in the midst of these. A magnificent Maréchal Niel occupied the place of honour near the entrance door, having had the wall copped with old frame lights for his special delectation.

I take this opportunity of remarking that having now bloomed Reine Marie Henriette, my impressions in its favour are strongly confirmed. I obtained three plants in the spring from Mr. George Paul. One was crippled by the weather; one under a south wall is growing quite as vigorously as the Gloire de Dijon; and one has just given me a beautiful bloom, very like Souvenir de David in colour, only of three or four times that substance.—A. C.

### THE SEASON AND THE FRUITS.

I HAVE heard of a man, angered by constitutional gout, who when asked "How is your gout to-day?" was wont very unctuously to reply "I wish you had it." I also knew a good-humoured man, one of the best fellows I ever met with, who used to say, "How are your Potatoes this year?" and if he had the answer "Very bad," he would reply with a sly twinkle "I'm glad of it, for so are mine." The former anecdote was given in earnest, the latter merry banter. I suppose according to our nature are our feelings this bad season. In regard to our gardens, to my own mind it was quite cheering to read Mr. Peach's account of his garden success, and I half wished myself from my present Bath neighbourhood even in Yorkshire—from south to north, which few of us southerners are apt to wish. "All the worse for your bad taste," possibly a Yorkshireman may reply.

I think that the difference between Yorkshire and warmer North Wilts, especially my part near Bath, is a reason why a difference of pruning may be necessary to cause success in the cultivation of pyramids. I see no reason for altering my plan in regard to pruning. It is this: I receive the tree from the nurseryman trained as a tree; I simply cut clear away any

branch that grows across, and also any that hinders light and air passing through. I have at this moment an Irish Peach Apple tree heavily laden with fruit, which tree during the five years I have had it I have never touched with the knife, as it naturally grows free from crossing branches. I would observe by the way, for the comfort of pyramid growers, that on trees of this form and this form only have I any fruit. My large standards are fruitless. By not pruning hard or planting very near for protection I obtain large pyramids; and size of tree being gained, a greater abundance of fruit is the result. A dwarf tree cannot produce many Apples or Pears, it is too small for that happy result. I rejoice in Mr. Peach's success, and do not doubt but that in his climate his close planting and hard pruning have something to do with that success.

Next, up to the present time how stands the fruit crop! Then, considering the lateness of the time of the year, how about the fruit crop not yet ripened? As to the present I am bound to say that Currants, Gooseberries, Strawberries, and Raspberries have in spite of the want of sun ripened fairly, but the flavour is not as good as usual, particularly of the Raspberries. There is a watery taste and a want of rich flavour. All these fruits have come in later than usual, but they have come in at any rate. So far so good. The housewife and the cook may rejoice in their full jam pots. Nature will always recover herself and make up for loss when she can, but it is only when she can. Time hurries on, and time is against her now.

Thus, though Roses have opened without sun and bush fruit has ripened, both have been much later than usual, having had to take more time for their work; but how about the future? Soon will September be here. Shorter days are upon us and longer nights; therefore, however warm the days may become, yet the nights must be colder, and hours and hours less of the beautiful daylight. Is it possible, then, that the Plums and Pears, now very small and very hard, can be ripe before the fall of the leaf, when Nature can do no more for them? I fear not. They have not time to make up for former loss as the earlier fruits had. Summer Apples late and not good there may be, and some early Pears—which will be medium season ones this year—but all other fruits I owe I give up as lost. My advice, then, to masterfamilies is to preserve without delay abundance of Currants, Gooseberries, Raspberries, and Strawberries, for Plums and Damsons will be few. I hope I am wrong, but I fear I am not.

In regard to pruning the trees, which have this year grown too luxuriantly—even coarsely, I quite coincide with "A NORTHERN GARDENER." This is an exceptional year, and if the branches be not kept very thin the wood cannot ripen, considering the absence of sun and the continued lowness of the temperature. Thin out, then, without stint, and shorten the branches if that be your system; at any rate, thin out industriously. As "A NORTHERN GARDENER" says, "The remedy for crowded trees and imperfect spurs and foliage is the knife, not applied in winter after the injury has been done, but now—in summer—when it may be prevented."

One final word about the vegetables. The Potatoes in this district were fine, the leaves perfectly green, and roots good until the great thunderstorm of August 2nd. In a few hours the leaves were brown and mischief began. As to the Pea crop, as seen at a distance it looks like one of those tempting pictorial advertisements where the Peas are hanging in vast abundance; but come near, and you will find the pods only half full and many not even that, also the flavour wanting. I will finish with an anecdote. In June I met a humorous friend of mine—an old bachelor clergyman, who might take for himself the motto, "Let there be more plain living and high thinking," for he fulfils it—and I asked him about his Potatoes. "The old ones," said he, "are gone, and no new ones to eat, so I live upon rice and hope." Perhaps not all our readers may care to live quite so plainly; but in gardening we may, in spite of the bad season, "live on hope" of a better time next year.—WILTSHIRE REMOTER.

### WORMS IN BOWLING GREEN.

If your correspondent (see page 89) who writes about worms on a bowling green will take forty gallons of pump water, 1 oz. of corrosive sublimate dissolved in a little hot water, mix all well together, and apply with an ordinary watering can in the evening or after a shower, he will find the worms disappear and the grass will not suffer any injury. We believe the large lob worms have appeared in greater quantities and caused more

trouble to gardeners this season in consequence of the continued rains than for many years past.—DICK RADCLIFFE & CO.

### BELSTON HORTICULTURAL SOCIETY.

AUGUST 4TH.

THE seventh annual Show of this Society took place on the above date, and we must say it was far in advance of any previous exhibitions held here. Boses being the special feature of attraction, the Committee had determined to have a Rose show if possible, and their attempt was crowned with success, bringing together as it did the cream of the midland and north midland amateur growers. When such ardent lovers of this beautiful flower as the Rev. E. M. Poshin, Canon Hale, and Mr. A. Scames exhibit we may expect to see something above the average of village shows. There were two classes open to all comers (amateurs excepted) both of which were well contested.

In Class 1, for twenty-four dissimilar blooms, no less than six collections were staged, the competition being extremely close. The highest prize was obtained by the Rev. E. M. Poshin, in whose box we noticed a remarkably fine bloom of *Duc de Wellington*, which was very good in colour and of a size seldom obtained in this variety, also fine examples of the following varieties:—Paul Neyron, Alfred Colomb, Marguerite Brasseur, Reynolds Hole, Madame G. Jeuneaux, and Madame C. Wood. Mr. A. Scames was a good second with blooms scarcely inferior to the above but wanting a little in form. Among them we noticed as being very fine *Souvenir d'Eliza*, Marie Raby, Marie Daumann, La France, Marguerite Brasseur, Le Havre, and a new Tea of 1878, *Madame Lamont*, which we think will prove a decided acquisition to the Domestic section of Roses. The Rev. Canon Hale was placed third. His blooms had evidently suffered severely from the heavy storms of the last few days; his stand, however, contained the premier bloom in the class—viz., *Amie Wood*, with substance and colour that are rarely seen in this variety. We also noticed Marie Brasseur, Charles Lefebvre, Horace Vernet, and Dr. Andry as being very fine.

In the class for twelve dissimilar varieties the competition was much stronger, eleven boxes being staged. First honours were obtained by Mr. Scames; the second prize was awarded to a local amateur, Mr. F. Sprey, closely followed by Mr. Poshin. In the class for cottagers Mr. Sprey showed a remarkable six, which included a superb bloom of Charles Lefebvre, to which a special prize was awarded as being the finest bloom in the whole exhibition. Mr. H. Frettingham, nurseryman, also enhanced the beauty of the Show to a considerable extent by the quantity of blooms he displayed not for competition, containing many new and choice varieties.

Ferns were also a special feature of the Show. E. J. Lowe, Esq., of Highfield Park, staged a fine collection of British and exotic varieties not for competition. On the whole we think the Show was a decided success, great credit being due to the exertions of the Committee and their President, E. Watson, Esq., under whose management so much has been achieved.—ROSEARIAN.

### THE LATE STORM—GLASS STRUCTURES.

FOR the last ten or twelve years the glass houses in this place for fruit, &c., have not suffered in any way from hail; they are built of the wedge shape, and hail glances off without injury to the glass. Most of these houses are from 7 to 8 feet wide at the bottom and from 2 to 4 feet at the top; some are open at the top and others closed, with proper ventilation at top and bottom. After the first year it is most unusual to find a square of glass cracked. The rafters of these houses are grooved for the glass, which is merely slipped in without putty or laps. The glass is kept firm by a thin piece of copper being driven into the groove between each square (i.e., between the abutment) on each side. These houses have received no attention whatever since they have been erected, the wood having been made imperishable by creosote; they are of the most economical description; we have one 150 feet in length. Every year it has produced fine crops of Peaches, Nectarines, &c., of perfect flavour and of large size. The first house I constructed on trial; it has in it one Peach tree, Marquis of Downshire, bearing this year 300 fruits, and the other tree, a Royal Ascot Nectarine, has 150; this little place is open at the top and also beneath the glass. The air flows up between the tree and the glass. The only protection given to the house during the frosts was some old sacks. These houses, when closed at the top, can be shut up after three o'clock, when the heat often rises to 100°. As the rays of the sun glance off (the buildings run north and south) not a leaf is scorched, and no red spider ever appears, excepting at the south end, which is syringed with buttermilk, which remains on the glass of all our houses more than a year, and it

slightly but efficiently obscures the sun's rays. We have had no occasion to use this fluid this year; even after so much rain a film remains on the glass.—OBSERVER.

### NOTES ON STRAWBERRIES.

LET me add a few more words about Strawberries in answer partly to "AMATEUR, Cirencester." I cannot altogether agree about his selection. I have tested every one of the Strawberries he names, and have entirely done away with Keens' Seedling, for though no doubt a good bearer, yet the flavour, to my mind, is so inferior I should never care to have it on my table any more than Black Prince. Sir Harry, again, is a very inferior Strawberry, and after two or three years' trial of *Le Constante* it was such an uncertain bearer with me, and of inferior quality, that it too was condemned to the rubbish heap.

I can strongly recommend Rivers' Eliza as a late variety, very large, and very prolific. Some that I only planted last autumn—and, as I think I have said, I put three plants in 6 inches apart for each stool instead of only one—are in full bearing, having greater crops in fact than two and three-year-old plants. On my trial ground my rule is to cut out any I do not like, and plant rows of others alongside those I do; thus *Souvenir de Kioff*, Sir Charles Napier, Wonderful, Myatt's Prolific, Eleanor, Sir Harry, and Amateur have all been discarded. By far the best Strawberry I have is Lucas; quite as high coloured and much better flavoured than Sir Joseph Paxton, does not straggle, has a short stiff flower stem, beautiful dark green foliage, will produce more on the same space of ground than any other Strawberry I know, and holds the fruit well off the ground. Sir Joseph Paxton this year with me has cropped heavily, but has straggled and run so that it has been difficult in the extreme to avoid all the berries decaying on the ground, though I must own it is an undoubtedly good Strawberry.

My present selection would be President, Lucas, Sir Joseph Paxton, Garibaldi (*alias* Vicomtesse Héricart de Thury), James Veitch, Crimson Pine, Early Crimson Pine, Sir J. Falstaff, Coxcomb, Traveller, Newton's Seedling (especially for preserving), Rivers' Eliza for late—indeed Coxcomb, Traveller, and Eliza are all late, as is also the old Elton Pine, which ought never to be omitted in a large list of Strawberries.

*La Grosse Sucrée* has done well with me, in fact I may say I have not a failure in twenty-six sorts this year. There are other sorts of Dr. Roden's which I will report on more carefully another time. Out of twelve sorts there is only one I feel at all inclined to discard. I did not begin gathering this year till the 22nd of July, but, as far as I can at present judge, I shall have Strawberries from Rivers' Eliza and Coxcomb in September, also from Traveller and Newton's Seedling.

One thing I may advise "AMATEUR"—that if, instead of adding Currant juice, he will only adopt my plan—i.e., a quarter of a pound only of sugar to a pound of Strawberries, and use chiefly Garibaldi and Newton's Seedling—he will not find the Strawberry jam too hucious. No greater mistake is usually made about preserves than the old-fashioned rule of a pound of sugar to a pound of fruit, a sort of rule of thumb order handed down from old days. No ripe fruit ever requires more than from a quarter to half a pound of sugar, and even green Gooseberries and unripe Plums are better for not having too much sugar with them. As I have preserved already about fifty pots of Strawberries this year I can speak from experience on this question.

As for applying liquid manure to Strawberries it is, as a rule, a mistake, encouraging too much foliage. I never water the plants, but only mulch with manure in the winter, and not too early, letting them have all the sun and air they can in the autumn. In a very dry season do not cut off the runners or leaves too close, but in a wet one try and keep every plant as distinct as possible. As "AMATEUR" appears to possess Lucas let him take my advice and throw away any other Strawberry rather than it; but then he must be sure he has it true. There is a variety, something like an improved Keens' Seedling, sent out in some cases instead of Lucas. As for "AMATEUR's" advice about Keens' Seedling, I will guarantee to get with six of the Strawberries I have named a heavier crop on the same space of ground than Keens' Seedling ever bore or could bear, I mean by weight, and have Strawberries twice as large; and if in number both Garibaldi and Newton's Seedling would easily double it.

I may add in conclusion that while agreeing in the main with Mr. Laxton, I can only say President has never failed to set fruit every year with me, and has as heavy a crop as ever.

I weighed another fruit yesterday (1½ oz.) off a three-year-old bed, and I have a bed now nine years old, which I keep as a curiosity, still in full bearing. I should like to try some of the sorts he names, if he would like to exchange runners with me for others.—C. P. PEACH.

### NATIONAL CARNATION AND PICOTEE SOCIETY'S SOUTHERN SHOW.

To say that the Exhibition that was held in the Royal Horticultural Society's Gardens at South Kensington on Tuesday last was superior to any that has been held before is not wide of the mark, the flowers being much more numerous than they have been at any former exhibition since the southern Show was resuscitated some three years ago. There was also a considerable addition to the number of exhibitors. The flowers also generally were finer grown and better set up than I ever remember to have seen them.

In the class for twenty-four Carnations Mr. Turner, although possessing the largest flowers, was considered only equal to Mr. Dodwell, and these exhibitors were both very properly adjudged first prizes. Mr. Douglas's flowers generally were past their best. The flowers were superb indeed. I never remember to have seen finer. In the corresponding class for twenty-four Picotees Mr. Turner was very properly first with immense and very fine flowers, followed closely by Mr. Dodwell, whilst Mr. Douglas's Picotees seemed to have lost their freshness. Amongst the young growers Mr. Arthur Medhurst set up a splendid stand of six Carnations, and also of six Picotees, closely followed in both by Mr. W. H. Dodwell, whilst Mr. Burnaby Atkins was a good third. A somewhat strange circumstance, and more particularly so to northern growers, was the great increase in the number of Selfs exhibited. In addition to the great increase there was also a decided improvement in the quality of the flowers represented by a couple of stands at the first Exhibition. At this Show the stands numbered five of twenty-four blooms each, five of twelve each, and an immense stand of thirty-six blooms, whilst in single blooms six singles were shown, and a beautiful Self white.

The prize for the premier Carnation was awarded to Mr. Turner for Sybil, R.F., and when I say that it was a far finer flower than the one which won premier two years ago I think I shall have all those with me who recollect that fine flower. The prize for the premier Picotee was awarded to Mr. James Douglas for Mrs. Payne, a medium feather-edged Rose of good substance and immensely large petal.

The yellow ground in Picotees is also taking a decided lead, and I fully expect to see that we shall have a class of yellow ground Carnations and Picotees with flowers equally good in quality as those with white grounds. Upwards of twenty years ago the late Dr. Horner, father of the present Rev. F. D. Horner, strongly advocated their cultivation, and one of which I considered his best articles was written recommending the culture of the yellow Picotee.

Of the newer sorts exhibited the following are the most noteworthy:—In scarlet Bizarres Mr. Dodwell had in his stand one named Charles Turner, a seedling from James Cheetham, which it resembles very much in shape of petal; the colour, however, is much deeper than that variety. It is a noble broad-petalled variety, and when it is distributed no stock will be complete without it. Another one—a seedling from Dreadnought—named Job Matthews is also a sterling flower. Mr. Dodwell also won second honours in the classes with a seedling, a brilliant flower. This sort I take to be a first bloom, as it had 1879 on it. Mr. Dodwell also exhibited several other seedlings also of great promise. In crimson Bizarres Mr. S. Buttram exhibited one called Randolph, rather rough but very fine in colour. In Picotees Dr. Abercrombie exhibited by Mr. Turner was extremely fine, winning first in the class. Mr. Dodwell again exhibited the variety called Novelty, and a novelty it is, a fine-formed flower with a violet-coloured edge. He also exhibited a seedling rose-edge of great promise. In Selfs there were a number of good seedlings from Messrs. Turner, Hale, and Hooper. The following first-class certificates were awarded:—To Mr. Charles Turner for Picotees Dr. Abercrombie, H.R., Baroness Burdett Coutts, M.P., and perpetual Coronet. To Mr. T. S. Ware for yellow perpetual Chromatella, and to Mr. Wilmer for Clara Penatone, L.P. I can only say in conclusion that I hope the Society will go on prospering as it has done, when we shall be able to say that florist flowers are at a premium instead of a discount in the south. A list of awards and the principal varieties is appended.—Geo. RUDD.

**CARNATIONS**—In Class A, for twenty-four blooms not less than twelve dissimilar varieties, Mr. Charles Turner was placed first with Sybil, Squire Trow, James Taylor, Mars, Braidsley Hero, Clipper, J. D. Hextall, Florence Nightingale, John Keet, Mrs. Brown, Sporting Lass, Graceless Tom, Mayor of Nottingham, Admiral Curzon, G. F. Wilson, and Rifleman. E. S. Dodwell, Esq., Larkhall Rise, Clapham, was awarded equal first for fine specimens of Unexpected, Clipper, Sarah Payne, Dreadnought, Mrs. Murray, Annihilator, Captain Stoll, Sybil, Admiral Curzon, James Douglas, Squire Trow, Mars, James Merryweather, J. D. Hextall,

Charles Turner, Florence Nightingale, and Crista-galli. Mr. James Douglas, gardener to F. Whitbourne, Esq., Loxford Hall, Ilford, was second with smaller but generally neat blooms, Sarah Payne and Sportsman being particularly good. Mr. H. Hooper, Vine Nursery, Widcombe Hill, Bath, was third with somewhat different blooms. There were four competitors in this class.

In Class B, for twelve dissimilar blooms, Mr. E. S. Dodwell was placed first with flowers of superb form and substance. The varieties represented were Llewellyn, Robert Lord, George Rudd, Florence Nightingale, Sportsman, James Douglas, John Ball, J. D. Hextall, John Keet, Mars, and James Merryweather. Mr. Douglas was a close second, Squire Meynell and John Keet being very fine. John Hines, Esq., Ipswich, was third; Mr. John Matthews, 489, Wandsworth Road, fourth; George Rudd, Esq., Bradford, Yorkshire, fifth—in this collection Admiral Curzon and Lord Raglan were extremely fine; and Samuel Buttram, Esq., Burgh Mills, Woodbridge, sixth. There were eight entries in this class.

In Class C, for six dissimilar blooms, Arthur Medhurst, Esq., Priory Road, S.W., secured the premier award with excellent examples of James Douglas, Annihilator, Admiral Curzon, Sybil, J. D. Hextall, and Sportsman. W. H. Dodwell, Esq., Sydney Villas, South Lambeth Road, was a good second, Admiral Curzon being fine. Burnaby Atkins, Esq. (gardener Mr. A. Gibson), Halstead Place, Sevenoaks, was third. Those enumerated were the only exhibitors.

In Class D, for single specimens, a large number of blooms were exhibited. Five prizes were offered in each class. *Scarlet Bizarres*.—Mr. James Douglas was first with Admiral Curzon, good. Mr. E. S. Dodwell second with a seedling; third with the first-named variety; fourth with True Briton; and fifth with Admiral Curzon. Seventeen blooms were shown in this competition. *Crimson Bizarres*.—Mr. C. Turner was first with J. D. Hextall, very bright and good; and second with a seedling. Mr. J. Douglas was third with a seedling; fourth with Rifleman; and Mr. E. S. Dodwell was fifth with a seedling. Twelve blooms were entered in competition. *Pink Bizarres*.—Mr. J. Hines was first with Sarah Payne. Mr. J. Douglas second with the same variety; third and fourth with James Taylor; and fifth with Sarah Payne. Eleven blooms were shown. *Purple Flakes*.—Mr. C. Turner was placed first with Squire Trow; Mr. E. S. Dodwell second with James Douglas; Mr. J. Douglas third with Squire Meynell, and fourth with Juno; and Mr. E. S. Dodwell followed with True Blue. Eleven exhibits. *Scarlet Flakes*.—Mr. C. Turner was again in the coveted position with Clipper, a large and bright bloom; also second with the same variety. Mr. J. Douglas was third and fourth with Sportsman, and fifth with John Bagley. Ten blooms shown. *Rose Flakes*.—Mr. C. Turner held his usual position with Sybil, taking the second prize with the same variety, and third with John Keet. Mr. E. S. Dodwell was fourth, and Mr. Douglas fifth with Sybil. There were twenty-three blooms shown.

**PICOTEEES**.—In Class E, for twenty-four blooms of twelve dissimilar varieties, Mr. C. Turner obtained the first prize with a collection of superb blooms. The varieties were Her Majesty, Dr. Abercrombie, Emily, Leah, Mrs. Allcroft, Horace Mayor, Empress Eugénie, Lady Baston, Rev. J. B. M. Camm, Baroness Burdett Coutts, Lucy, and Miss Frowd. Mr. E. S. Dodwell was second with neat and clean blooms; Mr. J. Douglas third. Mr. George Rudd was fourth with a good collection, in which J. B. Bryant, the Rev. J. D. Horner, and Morna were fine. Mr. H. Hooper was fifth. Six competitors appeared in this class.

In Class F, for twelve dissimilar varieties, Mr. E. S. Dodwell obtained the premier prize with handsome flowers of Zerlina, Mrs. Allcroft, Alliance, Edith Dombain, Mrs. Dodwell, John Smith, Ann Lord, Royal Visit, Brunette, and Alice. Mr. J. Douglas was second, Mr. Samuel Buttram third, Mr. John Matthews fourth, Mr. John Hines, Ipswich, fifth; and Mr. H. Cattley, Bath, sixth. Seven collections were staged.

In Class G, for six dissimilar varieties, Mr. Arthur Medhurst secured the premier award with fair examples of Miss Wood, Morna, Mrs. Summers, Mrs. Lord, Ann Lord, and John Smith. Mr. W. H. Dodwell was second, and Burnaby Atkins, Esq., third.

In Class H, for single specimens—*Red, Heavy-edged*.—Mr. C. Turner was first with Dr. Abercrombie, excellent; Mr. Jno. Hines second with Princess of Wales; Mr. E. S. Dodwell third with John Smith; Mr. J. C. Buttram fourth with Col. Clarke; and Mr. Douglas fifth with John Smith. Seventeen blooms were exhibited. *Red, Light-edged*.—Mr. J. Douglas was first with Mrs. Bower; Mr. C. Turner second and third with Emily; Mr. J. Douglas fourth with Mrs. Bower, and fifth with Mrs. Williams. Twelve exhibits. *Purple, Heavy-edged*.—Mr. C. Turner was first with Mrs. A. Chancellor, Mr. J. C. Buttram was second with Norfolk Beauty, Mr. J. Douglas third with Alliance, Mr. E. S. Dodwell fourth with Zerlina, and Mr. Jno. Hines fifth with King of Purples. Eleven exhibits. *Purple, Light-edged*.—Mr. J. Douglas first with Minnie, Mr. C. Turner second with Her Majesty, Mr. E. S. Dodwell third with Ann Lord, Mr. J. Douglas fourth with same variety, and Mr. C. Turner fifth with Her Majesty. Twelve blooms were shown. *Rose or Scarlet, Heavy-edged*.—Mr. C. Turner was first with Royal Visit, second with Lucy, third with Mrs. Payne; Mr. J. Douglas fourth with Edith Dombain,

fifth with the same variety. Nineteen blooms were shown. *Rose, Light-edged*.—Mr. C. Turner was first with Mrs. Allcroft, second with Miss Ward; Mr. J. C. Buttram third with Miriam, Mr. C. Turner fourth with Miss Ward, and Mr. J. Douglas fifth with *Eselle*. *Yellow Grounds*.—Mr. C. Turner was first and second with Prince of Orange, Mr. Henry Hooper third with Miss Frampton, Mr. J. Douglas fourth with King of Yellows, and fifth with Prince of Orange.

In Class I, for twenty-four blooms of miscellaneous selfs, fancies, or yellow grounds, Mr. Charles Turner staged a remarkably handsome collection of blooms, and easily obtained the first prize. The varieties were Heather Bell, A. Alegatière, Rosa Bonheur, Coronet, Sybil, Unexpected, Mars, Bride, Prince Imperial, Mayor of Nottingham, Peter Stevenson, Admiral Curzon, Eccentric Jack, and Brilliant. Mr. J. Douglas was second, Mr. H. Hooper third, Mr. H. Cattle, Bath, fourth, and Mr. John Matthews fifth. There were six entries.

In Class K, for twelve dissimilar varieties of the above, Mr. E. S. Dodwell was first with good blooms; Mr. Arthur Medhurst second, Master Harry Matthews third, and Mr. John Abercrombie, Cheltenham, fourth.

In Class L, for twelve specimens in pots of any Carnation or Picotee, only one exhibitor appeared—Mr. J. Douglas, who was placed first with rose-flake Carnation Rose of Stapleford; Satisfaction, purple flake sport from J. Douglas, James Taylor, Clipper, Falconbridge, and Illuminator; Carnation Norfolk Beauty, Mr. Nichol, Rival Purple, red-edge Brunette, all well grown and freely flowered.

### SLUGS AND SNAILS IN GARDENS.

CAN any of your readers from experience tell me what will destroy snails, slugs, and their eggs? This is the inquiry of "G. O. S." on page 104; and I think the candid reply must be, No one can tell of any specific that will wholly meet the case without being either too expensive, or as injurious to the plants as to the devourers—in common parlance, making the cure as bad as the disease. He has tried paraffin oil and water, McDougall's disinfecting powder, and nitrate of soda, and has used both soot and lime, but mixed with the manure heap, which he suspects has had merely the effect of keeping them warm there during the winter. I have found the most potent means of destroying all kinds of noxious vermin, slugs and snails included, to be constant stirring of the soil; by doing so you throw those that are buried to the surface. They are frequently eaten by birds; and to make certain of this let "G. O. S.," or others similarly annoyed, procure a clutch of young ducklings. Every spadeful of earth turned they will search minutely, and if allowed full liberty they will roam rapidly over a whole garden. Expose the soil intended for bedding or other purposes to a few hours' hot sun, and there is scarcely a slug or an egg of one, in the tender stages especially, that will not be effectually killed. If I made an exception of anything it would be of a hard black slug, that for experiment I have often put on a smooth surface and coated over with lime or soot—often effectually.

It must be recollected that all slugs are capable of burrowing into the soil, and through those same safe channels they may be seen emerging after a shower, when the dew begins to fall in the evening, and generally when the soil and surface is in a moist state. Turn up the soil, and you turn up the slugs and snails and effectually close their channels of retreat. Even if they escape the lynx eyes of ducks, birds, or their arch enemy the gardener, they find it difficult to burrow into the earth again before the sun or some other agency has destroyed their soft bodies. Some plants slugs will not touch at all, such as *Tropeolums*, owing to a hot acid juice they contain; others, as young *Petunias*, *Asters*, *Godetias*, &c., they will certainly devour. When plants become robust they are rarely injured, except *Marigolds*, which are devoured ravenously at all stages. Lime in dry weather scattered loosely around the base of a plant is an effectual check; repeat it after rain. Carried down by the rain it is both a manure and a deterrent to worms and other injurious agencies. To protect *Petunias*, &c., in circular lawn flower beds, Mr. Loneyan, Birdhill, has adopted with effect the curious expedient of tarring a circular hoop which he has joined on the outside of the bed. The soft tar stops every intending marauder. These and similar expedients may be tried by "G. O. S." with benefit to his garden and without great expense.—W. J. M., *Clonmel*.

"G. O. S." asks about destroying slugs and snails. Let me again strongly advise persons not to tamper with paraffin; nothing is so injurious, as it is perfectly insoluble in water. Carbolic acid is a much safer substitute, and good crystallised

carbolic acid is quite soluble when melted and used in a weak solution, especially if soft soap is added. The best cure for slugs is quicklime and common salt mixed together and dusted on the ground between the crops. Guano and nitrate of soda are also useful, checking the slugs and invigorating the crops. I have been but very little troubled with slugs, having no Box borders but only tiles. Every inch of ground is forked twice over and left fallow before planting the crops. Nothing so thoroughly destroys slugs as this, but on heavy clay this cannot be done.—C. P. PEACH.

### ROYAL HORTICULTURAL SOCIETY.

AUGUST 12TH.

THE principal feature of this meeting was the National Carnation and Picotee Society's Show, which had been postponed to this date from July 22nd; but the miscellaneous collections from nurserymen and amateurs were also numerous and good, and altogether the meeting proved a highly successful one, for attracted by the fine weather a large company of visitors assembled during the afternoon. The Carnation Show was held in the entrance hall near the Council-room, but any general description or critical remarks would be superfluous on our part, as the observations which are subjoined of the noted cultivator of Carnations Mr. George Rudd render anything further unnecessary.

**FRUIT COMMITTEE.**—Henry Webb, Esq., in the chair. The duties of the Committee on this occasion were rather light, for very few collections were exhibited. Mr. W. Carmichael, the Gardens, Newton Court, Bury St. Edmunds, sent a large, handsome, yellow-fleshed Melon named Victory of Bristol, very finely netted and of excellent flavour, for which a first-class certificate was awarded. Mr. James, gardener to Sir John Walrond, Bart., sent two fruits of a seedling Peach of no especial merit. Mr. Gilbert, the Gardens, Burghley, sent examples of a new Pea, Hobart Pacha. Messrs. J. Carter and Co. also sent a new Pea, Carters' Stratagem; and Mr. Robert Veitch of Exeter exhibited Exeter Marrow Pea. From the Society's garden at Chiswick came fruits of *Rubus biflorus* or *leucodermis*. Messrs. James Carter & Co. sent samples of Culverwell's Telegraph and Carters' Telephone Peas, with a request that the Committee have them cooked to decide Messrs. Carters' claim that Telephone is wrinkled and of superior flavour, greater size, and distinct colour. The Committee confirmed the certificate granted to Telephone last year, and confirmed also Messrs. Carters' claim.

**FLORAL COMMITTEE.**—Dr. Denny in the chair. In the Council-room a number of miscellaneous plants were exhibited, *Roses*, *Tuberous Begonias*, and *Phloxes* being especially numerous. Messrs. W. Paul & Son, Waltham Cross, sent nine boxes of cut *Roses* in excellent condition both in respect of colour, form, and substance. Several varieties were unusually good, such as Alfred Colomb, Exposition de Brie, Pierre Notting, Alfred K. Williams, May Quennell, and Duchess of Bedford. A silver Flora medal was awarded. Mr. Charles Turner of Slough also contributed six boxes of superb *Roses*, which included fine representative flowers of Alfred Colomb, Louis Van Houtte, Dr. Andry, Sir Garnet Wolseley, Madame Victor Verdier, and Charles Lefebvre. This fine collection received a similar award. Messrs. Osborn & Sons, Fulham, received a vote of thanks for a large group of foliage plants and Ferns very neatly arranged. Messrs. John Laing and Co., Forest Hill, sent a most extensive collection of *Tuberous Begonias*, the varieties being both numerous and good. The most prominent were *Trocadero* and *Stanstead Rival*; the latter, which was awarded a first-class certificate, has extremely large and well-formed flowers, about 4 inches in diameter, and bright salmon scarlet in colour. A silver Flora medal was awarded for the group of *Begonias* and a collection of *Phloxes* in variety. Messrs. Paul & Son, Cheshunt, obtained a silver Banksian medal for a large collection of cut *Roses*, one box of Mrs. Laxton containing some remarkably fine blooms. Alfred Colomb and Docteur Andry were also well represented.

Messrs. Veitch & Sons exhibited a number of new plants and Orchids of considerable merit. First-class certificates were awarded for the following:—*Sarracenia formosa*, a hybrid obtained from a cross between *S. peitacina* and *S. variolaris*, a pretty and distinct form 6 to 8 inches high, with darkly veined pitchers; *Nepenthes Vieillardii*, with extremely dark pitchers. A number of fine *Iris* blooms were also exhibited, of which the following were certificated:—*Iris Kämpferi* var. Charles Maries, an enormous flower, white faintly streaked with purple, a yellow blotch at the base of each of the outer perianth divisions; *I. Kämpferi* var. The Jersey Belle, neat, pure white, yellow blotched at base of the perianth divisions; *I. K.* var. Sir Stafford Northcote, fine purple flowers, very large. The Orchids were fine; one specimen of *Saccolabium Blumei majus* was bearing five long spikes of its delicate purple-tinted fragrant flowers. *Zygopetalum Sedeni*, a hybrid between *Z. maxillare* and *Z. Mackayi*, with dark sepals and petals, and beautiful purplish-blue markings on the labellum. Several others were also good, and a vote of thanks was accorded for the group.



Messrs. Charles Lee & Son of Hammersmith sent a large and bright group of Tuberous Begonias, principally small plants but well flowered. A bronze Banksian medal was awarded. A vote of thanks was accorded to Mr. H. Cannell for a collection of cut blooms of Verbenas and Pelargoniums, and he also obtained a first-class certificate for a handsome *Oleus* with extremely dark velvety leaves streaked with bright crimson down the centre. Mr. B. S. Williams, Upper Holloway, obtained a first-class certificate for a new *Gladiolus*, *G. hybridus Lemouineus*, a cross between *G. gandavensis* and *G. purpureo-scuratus*. The colour is a curious creamy white with a tinge of green, the lower petals being dashed with rich crimson maroon. Messrs. F. & A. Smith of Dulwich received a vote of thanks for a group of Balsams, and a first-class certificate for a new *Fuchsia* *Eolipae*, with fine flowers, scarlet calyx, and rich purple corolla. Messrs. James Carter and Co., Holborn, exhibited a collection of Tropaeolums and French Marigolds.

Votes of thanks were accorded to the following exhibitors:—G. F. Wilson, Esq., F.R.S., for a plant of *Eryngium giganteum*; Mr. J. Tong, gardener to J. S. Sawyer, Esq., for a basket of bedding Begonias; Mr. John Wills, for a handsome specimen of *Hydrangea paniculata grandiflora*. Messrs. Veitch & Sons were also awarded a botanical commendation for a *Conocodon ramondoides*, a pretty little purple-flowered plant. Mr. Boller exhibited a large group of succulent plants, for which a bronze Banksian medal was awarded. An extensive and graceful group of Gloxinias, Selaginellas, and Adiantums was sent from the Society's gardens at Chiswick.

### NETTED VICTORY MELON.

ATTRACTED by the description of this Melon as to flavour and by the certificate that was awarded to the fruit by the Royal Horticultural Society, I obtained some seeds, convinced that any improvement upon Victory of Bath must be a decided acquisition. I did not expect to see much "net" in the new variety, as I have been operating upon the Victory of Bath Melon for some years to secure, if possible, a handsomely netted form of superior quality; but of the Melons raised the flesh was invariably scarlet when the netting was superior, whilst with moderate netting the flesh was invariably white, coarsely netted and somewhat carbuncled fruits having green flesh.

Two plants of Netted Victory were planted, both having dissimilar foliage and fruit. In the young fruit of the two plants the difference is very marked; one is very pale in colour, oval, with a long footstalk, the colour deepening as the fruit advances, and the fruit becomes ultimately bluntly oval, very singularly netted at the nose and shank end, the flesh white, thick, and in every respect first rate. The other plant produces fruit with a short footstalk, round as a cricket ball, only the ends are flattened, coarsely and peculiarly netted, having a tendency to carbuncle, the netting being confined to the stalk end of the fruit; flesh green, with an exquisite flavour. Netted Victory shows by its sporting something more influential than a scratched rind, leaving its mark in the progeny. Artificial netting would not affect the seed. Pollen influence has been at work, and though its effect may not be very decided it is nevertheless reproduced by some at least of the progeny. What pollen or male parent Mr. Gilbert may have employed to bring about the variation from Victory of Bath it would be instructive to know. Of its being solely a result of pollen influence, whether designed or accidental, I have not any doubt, it being prone to sport, as crossed Melons invariably are.

To net a Melon is no difficult matter; but to secure a handsomely netted fruit and high flavour is a different affair. Indeed, in crossing Melons we find varieties that are netted the best are not nearly so highly flavoured as others. The most ribbed, carbuncled, or smooth-skinned Melon can be in a single generation changed into a handsomely netted fruit, as I have proved in endeavouring to net Victory of Bath, which is as smooth as any Melon. I have in the first generation obtained a scarlet flesh as closely netted as Read's and as round; an oval fruit also scarlet-fleshed, even more closely netted; and a green flesh as round as an Orange, and as coarsely netted as Colston Basset; but not a single variety with a smooth rind. The smooth rind does not appear again until two or more crosses are effected, and then we have it with perhaps a little net at the nose and heel, along with a carbuncle or two. This form, though generally accompanied by a diminution of flesh and colour, is the highest in flavour of all; it may not further be crossed, nor will one plant in three afford the characteristic of the parent. There is no secret in or about such things. Why, therefore, withhold the parentage of high-class Melons?

At the principal agricultural shows pedigree is given for the benefit of breeders of horses, cattle, &c., and in horticulture the parentage of fruits and flowers ought equally to be associated with merit to the granting of a certificate.—G. ABBEY.

### THE LATE HAILSTORM.

I HOPE something will be done in the way of raising a public subscription in aid of some of the sufferers in the Ealing, Brentford, Richmond, Isleworth, Kew, and Twickenham districts through the late storm. Mr. Hawkins of Baywater has a large glass nursery, and his loss from broken glass and damaged plants is set down at something near £1000; Mr. H. B. Smith, Ealing Dean Nursery; Mr. Lane, The Grove Nursery; Mr. George Weeden, St. John's Nursery; Messrs. Waylett & Son; Mr. Smith, Chapel Road Nursery, &c., are heavy sufferers. The last four are jobbing gardeners and small florists, employing men for jobbing purposes, and feel their losses keenly. In addition there are many jobbing gardeners who have put up a little glass, and lost plants as well as glass, and these especially need assistance. At Brentford Mr. T. Petridge of the Boston Park Road Nursery, the well-known grower of variegated Pelargoniums, is a very heavy loser, and is indeed well nigh ruined. I am doing what I can to awaken some local interest on behalf of these cases, but it is very desirable that a public effort be made as in the case of the hailstorm of 1876, for owing to the adverse character of the season and the slackness of trade many of the small florists are less able to bear their heavy losses. I know of some who would gladly form themselves into a committee to ascertain damages and administer relief were any moneys forthcoming for the purpose. Assistance is urgently needed, and remembering the generous response made in 1876 I trust a similar feeling will be manifested on this occasion.—RICHARD DRAY, *Bancroft Road, Ealing, W.*

### NOTES AND GLEANINGS.

AT a General Meeting of the ROYAL HORTICULTURAL SOCIETY held yesterday, Dr. Denny in the chair, the following candidates were elected Fellows of the Society:—viz., John Becher, A. Brand, Alfred A. Henley, and James Wheeler.

— MAJOR-GENERAL ANDERSON, writing to us on the 3rd instant from Lakefield, Glen Urquhart, on the WEATHER AND VEGETATION, observes:—"Two or three nights back after dull cloudy weather, and following two or three days of bright sunshine, we had frost at night; this was succeeded by drizzling rain all yesterday, and now to-day we have had warm sunshine. These rapid alternations from hot to cold tell upon our outdoor plants, and everything is consequently in a most backward state. Our Roses are only just beginning to bloom. With such weather it is next to hopeless to succeed even with common plants."

— DURING the past week the PIONEER AMATEUR FLORAL SOCIETY held their second annual Exhibition in South Bermondsey, which is not exactly the locality one would expect to do much in the way of plant culture, and therefore the results were the more creditable to the exhibitors and surprising to the visitors. The whole of the plants exhibited were grown by working men in the neighbourhood of Bermondsey, and under conditions which were not the best adapted to success. For instance, one who exhibited a collection of miniature succulent plants informed us that they had been growing for some time under his bed, but whether this position was assigned to them as a means of protection during the severe weather of last winter or to stimulate growth we know not. Classes were provided for Fuchsias, Pelargoniums, Stocks, Petunias, Musk, Balsams, Verbenas, Calceolarias, Cacti, and Ferns, and all were well represented, particularly the Pelargoniums, Fuchsias, and Ferns. One enthusiastic exhibitor, Mr. Butler (a lighterman), secured no less than twenty-five first prizes and two second, thus proving the hero of the occasion. The Society is well supported by wealthy and influential patrons, and the attendance at the Show was good, for on the second day upwards of six hundred persons paid for admission. We wish the supporters of this little Society much success in their efforts to promote a love of horticulture among the masses of the people.

— A COLLECTION of cut flowers of TUBEROUS BEGONIAS was recently submitted to our inspection by Messrs. Sutton and Sons of Reading, selected from a batch of seedlings raised by them. The form, size, substance, and colours of the flowers

were extremely good, and several of the varieties could scarcely be surpassed for beauty and vigour. The crimson and scarlet flowers were especially noticeable for their great size; the other well represented shades of colour were pink, creamy-white, and yellow. The strain is an excellent one, and now that Messrs. Sutton have given their attention to these popular plants still further improvement is certain to follow.

— THE general condition of SOUTHWARK PARK is at the present time highly creditable to the management, and as a place for healthful recreation in a densely populated neighbourhood too much can scarcely be said in its favour. There is a neatness and cleanliness in the appearance of the turf, shrubberies, and the asphaltic walks which would bear comparison with far more pretentious public parks and gardens.

— ON a wall adjoining the herbaceous grounds at Kew the peculiar ROSE VERTS, or Green Rose, is now in flower, if such bunches of green leaves deserve the name of flowers. The origin of this plant seems involved in obscurity, for while some consider it as having first appeared on the continent, others state that it was sent from America, while others again attribute its origin to a small nursery in England. The name it bears at Kew is *Rosa sempervirens monstrosa*, and, as most of our readers are aware, its singularity is due to the conversion of petals, stamens, and carpels into small green leaves.

— GARBRAND HALL, EWELL, the residence of Mrs. Torr, is famed for the excellent plants, especially Azaleas, which Mr. Child grows so well and exhibits so successfully. But there is much to admire in Mrs. Torr's garden besides the specimen plants. The grounds, which are about 13 acres in extent, are enclosed by a lofty and substantial wall. This comparatively small enclosure has been made the most of by judicious arrangement. Banks have been raised, and curving walks formed in such a manner that the real extent of the grounds has been masked in a very successful manner. Shrubs, Conifers, and ornamental trees have been planted in profusion. Some of the finest variegated *Acer*s we have seen are there, also mop-headed *Acacias*, *Robinia inermis*. At the front of the mansion a beautiful miniature lake has been formed, the water being clear as crystal, so that the grand Lombardy Poplars, Willows, &c., growing near the margin are reflected with remarkable effect in the pure spring stream. A noble Tulip Tree near is flowering profusely. In one place is a flower garden, in another a roseroy with rocks and herbaceous borders in suitable positions, the whole garden forming a charming secluded retreat rendered additionally enjoyable by the excellent manner in which the grounds are kept by the gardener.

— MRS. TORR'S exhibition plants are not grown in low yet roomy span-roofed houses which one might expect to find, but in a long lofty range of lean-to's having a southern aspect. There the splendid Azaleas are arranged, some being elevated on large pots, others on taller drain pipes and large chimney pots, so that the plants are as near the glass as possible. The plants are not placed out of doors at any time, and they evidently receive the best attention, as is indicated by their cleanliness and free growth. Other greenhouse plants are in the same excellent condition, as also are the stove plants that are grown in the same range. Orchids are not so numerous as formerly, but the stock is a choice healthy one if small. Several houses are devoted to Grape culture, and useful crops are produced—quality of fruit rather than large-sized bunches being the object aimed at. In the conservatory are *Dicksonias* with trunks of unusual size, and in a case very fine examples of *Todea superba* with various flowering plants on the side stages clean and well cultivated.

— IN the KITCHEN GARDEN, which contains many fruit trees and good vegetable crops, the most striking and singular feature is the boundary wall, which represents a segment of a circle. For a considerable length the wall faces south or nearly so, and on this aspect every Peach tree has been killed by the late severe winter and inclement spring; but where the wall curves, presenting a south-eastern aspect, every tree is healthy. The trees on the southern portion of the wall grew and formed fruit, then the whole of them died suddenly, not a vestige being left. Mr. Child does not again intend planting Peaches there, and, indeed, it is little use doing so unless the trees can be covered with glass. The wall and aspect are suitable for diagonal cordon Pears, and it is questionable if any other trees could be planted more usefully and ornamentally.

— THAT charming miniature Spruce Fir *ABIES EXCELSA GREGORYANA* seems to do well on a rockery judging by its

appearance at Chiswick, although it is also adapted for other situations. The plant is extremely dwarf, almost rivaling *A. pygmaea*. The specimen referred to is not more than a foot in height, and about 2½ feet across the recumbent branches. The needle-shaped leaves are stiff and short, and are thickly placed on the branches. This variety was raised at the nursery, Cirencester, Gloucestershire.

— THE VAN HOUTTE MONUMENT.—We are informed that the unveiling of the monument of the late Louis Van Houtte will take place at Gendbrugge, Ghent, on Sunday the 17th inst. Delegates from botanical and horticultural societies will be received at 3 P.M. on the day mentioned in the Place Comte de Flandre, opposite the railway station. A banquet will be held on the evening of the same day at the Hôtel Royal, Place d'Armes. Those who intend to take part in the ceremonies should communicate with M. Ed. Pynaert, 142, Rue de Bruxelles, Gand.

— IN addition to the GOLD MEDAL awarded to Mr. J. Barham at the LIVERPOOL SHOW, for an extensive and superior display of wirework, a similar award was granted to the same exhibitor for the Allerton Priory Boiler, a powerful apparatus that is highly spoken of by practical gardeners in the district. No awards were made to implements when we left the Exhibition, and the list of medals, &c., granted in that section of the Show was transmitted to us by telegraph. Mr. John Richardson of Boston informs us that he was awarded first prizes in the open class for twelve dishes of vegetables and four dishes of Poes at the same Show.

— AN extremely handsome stove climber is *IPOMOEA PANICULATA* especially during the summer months, as it then bears a profusion of large crimson purple flowers in a somewhat paniculate inflorescence, from which character the specific name is derived. The plant requires a rather high and moist temperature, and a house devoted to tropical aquatics is excellently adapted to its requirements. There is a good instance of this at Kew, where the plant is growing luxuriantly in the old Lily house.

— WE recently noticed several extremely fine ORCHIDS flowering in the house devoted to these lovely plants at Kew, and especially remarkable was the handsome *Dendrobium* *McCarthyi*. This is an epiphytial species, a native of Ceylon, and it was introduced about 1854. The delicately purple-tinted flowers are borne in graceful pendant spikes; and when, as in this case, the plant is growing on a block suspended near the roof of the house, it appears very beautiful, and also thrives admirably, for a light position is requisite to its successful cultivation. That magnificent terrestrial Orchid *Diss grandiflora* was bearing numerous flowers of the bright scarlet-crimson hue which characterises it as one of the finest of the genus. *Lycaste Deppii* had several flowers of a greenish yellow colour clouded with brown; petals white; labellum yellow with chocolate spots. This old Orchid is rather attractive. A plant of *Stanhopea Wardii* was suspended in a basket, through the bottom of which it had forced a fine spike of its curiously spotted flowers.

## ON CIRCUIT.

### HELENSBURGH ROSE SHOW.

MY visit to Helensburgh this year was made under mingled feelings of pleasure and sorrow, and I was painfully reminded of my first visit four years ago when I was so heartily welcomed and so hospitably treated. The welcome was as hearty now and the hospitality as great, but those who first extended them to me are alas! no more amongst us. I shall never forget the kindness of the two gentlemen who then out of sheer love to the Rose welcomed a stranger amongst them. The pains they took to make my visit a pleasant one left a deep and lasting impression on me, and I should be ungrateful indeed not to remember it. One of them, the indefatigable Secretary and virtual founder of the West of Scotland Rosarians' Society, was most feelingly alluded to by several gentlemen who took part in the proceedings of the Exhibition this year, of which I must now give some account.

The Exhibition was held, as last year, in the Skating Rink, or rather what was the Skating Rink, for happily here as everywhere that American institution has not taken root amongst us; and notwithstanding the unfavourable nature of the season the number of the Roses exhibited was greater than that of last year, although no competitors from England entered the list, while the quality was certainly as good. As I have before explained the Exhibition here is peculiar. The stands are all furnished by the Society. "Stands" is, however, rather inapplicable to them, as they are simple tables covered with moss with tubes inserted in

them, so that each exhibitor has a place allotted to him. He takes the Roses out of his own boxes and places them on the tables. Thus all are on the same level, all are upon the same footing, and so far it is an advantage. Moreover, as one of the exhibitors said, "I am not troubled about my boxes. I can take them away when I choose, need not wait until the close of the Exhibition, and am thus independent." At the same time the plan has its inconveniences. Those who are in the habit of arranging their boxes previously to starting from home do not like it, and in the taking of the blooms from the box to put on the tables confusion often occurs and names get wrongly placed or lost.

Amongst nurserymen the chief prizes fell to Messrs. Dickson of Newtonards, who exhibited some fine stands, although not equal, I think, to those shown at Newton Stewart. Amongst them were some fine blooms of *La France*, *Baronne de Rothschild*, *Earl of Beaconsfield*, *Marie Baumann*, *Marguerite de St. Amand*, *Dr. Andry*, *Alfred Colomb*, *Duke of Edinburgh*, *Marquise de Castellane*, and other well-known varieties. The second prize was awarded to a local nurseryman, but was withheld owing to some of his flowers being unnamed. This is a rule which I think ought to be more rigidly adopted in the south than it is. It gives a loophole to a dishonest exhibitor (and there are such) who knows that he has unfortunately duplicated in his stand and yet is unwilling to give one of them a different name, and so leaves it alone, whereas if it were named the fraud might be detected; and there are some Roses which, although generally detected, yet in certain seasons come so near to one another that it is very difficult to detect them. The third place was occupied by Mr. Smith of Stranraer with some fine blooms. According to our southern rules he would have taken second place when the second stand was disqualified; but it was not so arranged here. Amongst amateurs the chief place was undoubtedly held by Major Dennistown of Rosalea, whose blooms were fresh, of good size, and exhibited proofs in their foliage of fine cultivation. His stands contained the usual well-known show varieties, and his stand of twelve blooms of *La France* contained large and beautifully fresh blooms. I desire particularly to notice it, because I had the opportunity of seeing his garden where Roses, few in number indeed compared to many, but of excellent growth and vigour, were evidently at home; and amongst them I saw the very finest plant of *La France* that I have ever seen my good fortune to come across. It was planted out, and was originally on the *Manetti*, although I have no doubt it has now established itself on its own roots. It was fully 5 feet high and as many through, so close and compact that you could not see through any part of it, and the twelve blooms alluded to above were cut from this one plant. Can any other exhibitor boast of such a feat?

At Helensburgh, as in most places, the rule has been adopted that no foliage should be added. I noticed on going round on my duties that one box looked very suspicious, the foliage was so ample and so neatly surrounded the bloom. Well, I took out one bloom, cut the base, and found a very clever evasion of the rule. No foliage was added, but the bloom stem was cut about a foot long; some 8 or 4 inches under the flower there was some good foliage, the stem was doubled up, and this foliage was brought up under the bloom. It was "unco canny." Nothing was added, and the bloom was in one sense shown as cut from the plant. But ought this to be allowed?

There was nothing remarkable in the class for new Roses (the prizes in this class being offered by Mr. Cranston); indeed, owing to old Roses being put in and the general inferiority of the blooms, no prizes were awarded. It was evident that although the Committee had lost the services of their indefatigable Secretary Mr. Galloway, yet there were others who were determined to make the Society a success; and with the kind and genial Provost Stuart as their President, I have no doubt the West of Scotland Rosarians' Society will tide through this disastrous year and have a prosperous course before it. The second prize for twelve Teas was awarded to Mr. James Service of Maxwelltown, at the Newton Stewart Show, and not to Mr. Smith as stated last week.

#### LEEK.

"It's a lang way tae Cupar" and so it is a good stretch and a tedious journey to Leek in Staffordshire, where I was to be on Tuesday, and so after a quiet day spent on Sunday at Helensburgh with my good friend Provost Stuart, I started off on Monday morning at eight, not reaching Leek until eight or nine in the evening. It was, of course, fine travelling on the Midland from Glasgow (by-the-by, let me recommend anyone who has to stay in Glasgow to try the new hotel at St. Enoch station) to Crew; but then commenced the delay; an hour to wait there and two at Stoke showed that the arrangements of the North Staffordshire railway are not quite of the first order, but at last I arrived, and was hospitably received and welcomed. I had thought Leek was a small place, but I found, on the contrary, that it was a busy manufacturing town, celebrated for its sewing silk, which is sent to all parts of the world. There is a very earnest band of Rose-growers who have started a very good club, and its exhibition of two years ago was duly noticed in the Journal. This year they were singularly unfortunate. The Show had been

twice postponed, but although the fixture was a fortnight later than originally intended it was still too early. Leek is a very cold place, and consequently backward, and in no place that I have seen this year has everything (including Roses) given such evidence of the very abnormal season through which we have passed. Strawberries on July 29th were hardly in, and it will be seen how difficult it must have been to have exhibited Roses, especially as it is confined to amateurs. Messrs. Newall, Cartwright, and others did their very best; but in many of the stands no expanded buds were put in, in order to make up the number. The most noticeable Rose I saw was a Tea in Mr. Newall's stand called *Madame Maurice Kuppenheim*. It has very large shell-like petals of a peculiar colour, although I am afraid there is not enough of them; it is, however, worth a trial. Messrs. James Dickson & Co. of Chester showed, not for competition, a very good stand. While the stove and greenhouse plants from Mr. Glozier's gardens exhibited evidence of very successful cultivation. There is a curious custom adopted here and at Newcastle previous to the show—a person accredited by the Society goes round and visits the gardens of the intending exhibitors in order to see what they are likely to exhibit, so that no deception may be practised. As it is a club with a few members this can be done, but I think, after all, it would be better to trust to the good feeling of the members. I have nowhere seen greater enthusiasm in the cause of the Rose than here. The times have been against them this season, but I do not think the men of Leek will be discouraged, but rather stirred up to increased earnestness, and with an energetic committee and efficient officers such as they have I am sure they will succeed.—D., Deal.

**FORCING STRAWBERRIES IN POTS.**—Your correspondent Mr. W. Bardney states on page 1, that I "appear to cling to the old system of forcing Strawberries." Now I can assure him I am only too pleased to hear of any improvement, but as the system of layering Strawberry runners in their fruiting pots has been practised for more than thirty years there is nothing new about it. I think the method of growing Strawberries for forcing I have described in the *Journal of Horticulture* is of a more recent date than the other. The Strawberry being of strong growth and subject to the red spider, is one reason for placing saucers under the pots, not only to contain a supply of moisture, but as a preventive against dripping on other plants which may be placed beneath. In winter the plants are placed in shallow cool frames on ashes with tar felting on framework in place of lights, merely for protection in bad weather. Surely a few frames are easily made like the above. I prefer this to the old plan of stacking the plants, &c. By this treatment I have been amply repaid with well-flavoured and large fruit.—H. C. OGLE, Turnworth.

#### CLETHRA ARBOREA.

*CLETHRA* is an Ericaceous genus which comprises at present known about eight species, five of which are natives of North America, one is found in Peru, another in Jamaica, and the one under consideration is confined to the island of Madeira. All the species are shrubs, and there is an interesting fact in connection with their geographical distribution which is deserving of notice. The hardy species—viz., those from North America, are deciduous, whereas the others, which require the protection of a greenhouse, are evergreens. In the latter section is included the old but remarkably handsome *C. arborea*, a spray of which, obtained from a fine plant in the Royal Horticultural Society's Garden at Chiswick, is represented in the annexed engraving (fig. 18).

This species, which undoubtedly far surpasses the others as a decorative plant, was introduced to the Royal Gardens, Kew, in 1784 by Mr. Frederick Masson. It has bright green elliptical leaves, and bears numerous terminal compound racemes of pure white, bell-shaped, fragrant flowers. The shrub attains the height of 8 or 9 feet, and succeeds admirably in a pot, the soil consisting of sandy loam. It would, no doubt, also grow outside if planted in a sheltered position in the southern counties of England, but we are not aware that the experiment has been tried. The slightly pendulous thickly placed flowers are highly suggestive of Lilies of the Valley, and are admirably adapted for cutting purposes, as they keep for a considerable time after being separated from the plant. Although not absolutely neglected, yet this plant is by no means so extensively grown as its merits demand, as a more beautiful shrub for flowering during July and August in a conservatory or greenhouse could scarcely be found. The flowers and buds are admirably delineated in the engraving, but our artist has





Fig. 18.—CLETIA ARBOREA.

failed to pourtray the elegant and pendulous character of the racemes.

### BANK HOLIDAY AT CHESHUNT.

"It's an ill wind that blows nobody any good," and the cold and wet that has prevailed for the whole of the first six months of the year, killing our tender Rose trees, withering-up the foliage, and retarding and knocking to pieces our blooms, has at last provided me with the above-named treat. It is a day's enjoyment that I had long promised myself; but July, when the Roses are generally in full bloom, is such a very busy month with me that I have been unable to spare a day, and the first Monday in August has found the Roses nearly all over; but this year they have been so retarded that they are only now to be seen in their beauty. On arriving at the nurseries I was welcomed by Mr. Paul, and by him passed on to his energetic and obliging Rose foreman Gater; and with the soil and situation so good, and with a foreman so intelligent and painstaking, and with such a love for his work, it is no longer a wonder to me how Mr. Paul is able to take such a high position as a Rose exhibitor.

Our first point was a fine batch of the newly introduced Roses, among which Alfred K. Williams stands pre-eminent. It is a good grower, with large bright red flowers of good substance and fine shape, something like Horace Vernet, but a more vigorous grower. It appeared to me to be the best Rose of its year, an opinion in which I was glad to find both Mr. Paul and his foreman concurred. The next in order of merit appeared to be Madame Gabriel Luizet, a large finely-shaped Rose, between Abel Grand and La France in colour, but stiffer petalled. Constantine Fretiakoff seems to possess all the good qualities of Comtesse d'Oxford, but is somewhat lighter in colour and a stronger grower. Madame Marie Verdier I was much pleased with; it is of a pure rose colour with very fine petals. Boieldieu, Charles Baltet, Edouard Pynaert, Princess Charlotte de Tremouille, Madame Laboulaye, and Edouard Dufour seem likely to turn out well, but will require further proving. Mabel Morrison is a healthy free-growing Rose of a beautiful pure white colour, but too thin for exhibition purposes. Souvenir d'Auguste Rivière is a splendid dark Rose but flat, while Mr. Turner's two Roses Penelope Mayo and Dean of Windsor are both grand; the former rosy carmine in colour and of beautiful pointed shape, the latter of a darker colour and similar in shape to Oxonian. Mr. William Paul's May Quennell is a fine globular exhibition Rose, bright centred with darker shading, and of vigorous hardy growth.

We next turned to Mr. Paul's own Roses, and I was glad to find that they almost all have fine high centres instead of being flat and thin as too many of the French Roses are, and that they are, so far as proved, good autumnal bloomers worthy of the name of Perpetuals. Of those already sent out Mrs. Laxton is decidedly the queen—beautiful in colour, of the very finest globular shape, and of exquisite fragrance. Another good quality is its perfect uniformity of character. After seeing it in one part of the nursery I had no difficulty in recognising it wherever met with; altogether a magnificent Rose. John Bright, too, I was especially pleased with. When this Rose obtained the prize as the best seedling at the Crystal Palace I thought it much too thin to be of any use except in the garden; but it now seems to have improved in this respect, and to have maintained its character as the very brightest crimson ever sent out. Marchioness of Exeter appears to be a fine Rose, but as it is an early bloomer I was unable to see really characteristic flowers. Emily Laxton is doubtless good, but I think those who already grow her sister Annie Laxton will scarcely need her. Robert Marnock and Charles Darwin are two fine brownish crimson Roses, both very free autumnals, the latter with a decided dash of Bourbon blood; and Marquis of Salisbury, one of those only just sent out, is a strong compact-growing plant with fine dark rose-coloured flowers of globular form. The wet of this year had been rather more than it appeared to like, but in ordinary seasons I should expect it to be a splendid Rose.

Three new Roses to be sent out next year are Duke of Teck, Climbing Glory of Cheshunt, and Earl of Beaconsfield. Of these the first has already been described more than once in your columns. It is of strong-growing habit, free-flowering, and bright scarlet in colour. Perhaps it is a trifle undersized, but it has already won prizes and certificates wherever exhibited. The second of the trio is a rapid yet strong-growing plant, with fine foliage and flowers similar in colour, and many

as large as Reynolds Hole, so that it will rank at once both as the finest dark climber and an exhibition Rose. The last one is a grand Rose as regards growth, foliage, and flower, and will go far towards immortalising the name of Captain Christy by whom it was raised. Of other seedlings of which the stock is to be greatly increased ready for sending out later on it is perhaps premature to say much, but I must refer to one which is dedicated to, and bears the name of, our amateur champion Mr. B. N. G. Baker. It will be enough to say that it appears to be a fitting companion for the splendid Rose sent out by Mr. Turner; or to quote Gater's words, "Mr. Baker likes it very much, and for him to like a Rose it must be a good one you know, sir."

From the seedlings we went to the Tea Rose garden, which is laid out in beds 8 feet wide. Down the centre of each bed there runs a light yet strong wire, to which are trained the strong-growing hardy Teas Gloire de Dijon, Belle de Bordeaux, &c. Next to these on each side is a row or two of standard Teas, the beds being finished off with a row of dwarfs next the walks. The whole is surrounded by a good hedge or fence, and the Roses are further sheltered by rows of trained fruit trees being interspersed here and there. The result of this careful yet very simple arrangement is that the Roses are quite safe from frost, and even with the bitter weather of last winter I was told their losses were extremely few, in fact scarcely any. Here were all our old favourites in large numbers and great beauty. Catherine Mermet, Alba Rosea, Cheshunt Hybrid, Niphetos, Souvenirs d'Elise and d'un Ami, and Devoniensis in such splendour as to make even Gater, who sees so many fine blooms, pause and exclaim as he lifted a lovely drooping specimen, "When are we going to beat this, sir?" Good new Teas are very rare, but I liked the look of Madame Nabonnand, a good-sized flower, something like Devoniensis, but with a pale pink centre; Madame Lambard, bright rose colour, in the way of President but larger and better shape; and Madame Welch, light yellow with darker centre.

Our next move was along the New River bank to a splendid lot of the older varieties—twelve acres of dwarfs and standards in full bloom, presenting a grand sight. There the visitor can see the same Roses on all stocks—standards, seedling Briar, Briar cutting, De la Grifferaie, and Manetti, and thus can order his plants on whichever seems to him to suit the variety best. The whole of the varieties were looking remarkably well; the general damp and gloom of the season had of course suited the dark Roses best, but there had been three or four hot days which had brought out the lighter ones in fine style. Reynolds Hole, Xavier Olibo, Sultan of Zanzibar, Prince Camille de Rohan, and Duke of Connaught among the darks; and Baronne de Rothschild, Marguerite de St. Amand, Marie Finger, and La France among the lights were splendid; but perhaps finest of all was Capitaine Christy. While we were admiring, Mr. Paul joined us with a fine bouquet in his hand consisting of a fine bloom of Mrs. Baker surrounded with three of Capitaine Christy, and he remarked, "It is not often I cut a Rose, but Capitaine Christy is so beautifully fresh this morning that I was tempted. I think that," pointing to one of the three, "is the finest bloom of it I have ever seen." I had an opportunity here of seeing a quantity of Eugène Verdier and Marie Finger growing side by side and comparing them; having done so, I am bound to say I think there is a decided difference between them. Marie Finger has darker wood, and the flower is darker in the centre, and again this variety has several large spines on each shoot, while Eugène Verdier has apparently none at all. Of course they are very similar and both would not be required in a small collection, but I do not think I go too far in saying they are nearly as dissimilar as Baronne de Rothschild and Capitaine Christy.

I was next conducted through ten large houses, in one of which the giants in pots, some of them sixteen or eighteen years old, which take honours year after year at the early shows in March and April, were quietly reposing, looking splendidly healthy. Another had a splendid Maréchal Niel trained all over the roof, while the bottom part was crowded with smaller plants of the same variety in pots, and the rest were filled with fine young plants of all the best sorts for this mode of culture. Then through the Rose garden formed of plunged plants in pots, laid out in about a dozen beds, each being filled with a light variety and edged with a dark one; Duchesse de Vallombrosa surrounded by Reynolds Hole and so on, and the whole enclosed by fine pillar Roses. Then through a Rhododendron garden, at the end of which is a Wellingtonia, declared by Mr. Harry Veitch of Chelsea to



be perhaps the finest specimen to be seen in England. Then past hundreds of pots containing plants of the newer or finer varieties, at present only tiny shoots a few inches high, but which being plunged in cocoa-nut fibre on hotbeds, grow in a few months into fine bushy specimens.

And then I had not seen all. I was told of several acres of Roses, mostly first-class Teas, at Highbeach, and of seven other houses which I had not visited. The fruit trees I had not been near, and the Strawberry ground I had seen nothing of; but I had seen enough, heard enough, learned enough, and brought away with me a fine bunch of Roses enough to make Bank Holiday at Chesham one of the pleasantest days ever spent by—A LOVER OF ROSE SHOWS.

### MAULDSLIE CASTLE.

MAULDSLIE had a history eight hundred years ago, and originally comprehended nearly the whole parish of Carluke, some six miles in diameter, and in the times of John Balliol and Robert the Bruce had been a royal forest, which was gradually broken up by the better, and like other extensive tracts in Scotland given to persons of distinction, in order doubtless to secure and maintain men skilled in the art of war at a time when Scotland stood in great need of them. The present castle, a noble pile of buildings, was built and finished in 1782-3. The walls are of stone from a quarry on the estate not far from the spot on which it stands. This stone, a cream-coloured one, seems to defy weather, for the castle looks as clean and beautiful as it did sixty years ago.

It stands on part of the estate which is unenclosed, and this part is remarkable for its charming though circumscribed scenery. The situation is about midway between Lanark and Hamilton on the north side of the river Clyde, and the castle is slightly raised above and overlooking the clear waters of this river, which bends round the pleasure grounds and tends westwards. The place is heavily wooded, and the trees near the house are very noticeable for their height, breadth, and symmetry; and most of them, like the houses in the City of Edinburgh, give one the idea that they are there for effect, standing just where they ought to be, and form part of a complete and finished picture. It is a pleasant spot well sheltered by rising lands all round, which are well covered with forest trees and orchards.

On this part of the Clyde the orchards are noticeable. The odd corners and sloping banks everywhere are planted with fruit trees. "The banks and bums," otherwise useless and unworkable, are converted into fruitful and profitable gardens. At Mauldslee there are nine acres of such orchards. The Gooseberries alone of these orchards sold one year for £300. I do not know what they were sold for this year; but the Gooseberries at Brownlee, adjoining Mauldslee, have realised £320 this season. The Gooseberries and Plums I have been told "pay better than Apples and Pears."

The unenclosed part of Mauldslee has changed hands several times. In 1850 it was in the market, and was then purchased by the late James Hoxier, Esq., and is now in possession of his eldest son. Since it fell into the possession of the Hoxier family everything about the place has been better kept. A substantial and beautiful bridge has been built across the Clyde, and an ornamental lodge for the bridge-keeper erected there; a new farm steading has also been erected, the home farm put into good trim and high culture, and the approaches to the house have a clean and neat appearance.

The gardens are of moderate size—about five acres of flower garden and three acres of kitchen garden. The flower garden is on the south side of the castle, in front of some of the principal rooms. The kitchen garden is some distance from the house, and is quite hidden from it by trees and shrubs. Two acres of the kitchen garden are walled in, and one acre lies between the south wall and the river. In the walled garden there is a good dwelling house for the head gardener (Mr. Gorrie) and a good bothy for five of his men. Evidently Mr. Hoxier is wishful to provide for the comfort of his servants. The hothouses are all in the kitchen garden and are of moderate dimensions. The three vineries are about 36 feet long each. The early house is filled with Black Hamburghs, the second one with Muscats, and the late one with Lady Downes' Seedling, all bearing fairly good crops of ordinary sized bunches with large berries. Peach trees were in full fruit. The Fig trees in another house are exceedingly healthy and fruitful. In two Melon pits were plants grown on wires loaded with fruit of a small kind of Melon. For the culture of plants and flowers

there are what is called a span-roofed stove, a span-roofed greenhouse, a Camellia and Fern house, &c., all of which we found filled with plants in full growth. A new fruit room, 24 feet by 12, was built last year. Above the fruit room there is another room the same size for keeping Grapes in bottles during the winter and spring months. This room is lathed and plastered, and is covered with both roofing felt and slates; it has a fireplace, and is shelved for holding 170 bottles in a slanting position. Mr. Gorrie told me he placed 170 bunches of Lady Downes' Grapes in these bottles on the 7th of January this year, which lasted the family until the 14th of June, and some of the bunches were good and plump to the last.

At Mauldslee there is much to admire, and little, if anything, to find fault with. In the kitchen garden there are two plain borders (without rockery stones) planted with hardy Ferns in great variety, each plant standing separate were, to my eye, models of novelty and good taste. The three terraces on the south front of the castle which make the flower garden might perhaps be altered with advantage at little cost. If the highest were lowered or removed the castle would appear more elevated, and the flower garden would have a better appearance and be better seen from the windows.—A. PETTIGREW.

### SOUTHPORT HORTICULTURAL SHOW.

AUGUST 8TH AND 9TH.

THE above Show took place on Friday last at Southport in the large conservatory of the Winter Gardens. We were somewhat surprised to hear the Show last year with its £400 in prizes was not well patronised, and are inclined to think with the Superintendent of the above gardens, Mr. A. Campbell, that if good local prizes were offered by the inhabitants of this fine watering place that greater interest would be evinced in the shows. We do not see why Southport should not have shows such as those of Leeds, York, Newcastle, Liverpool, and other large provincial towns. The conservatory of the gardens is a fine place for a spring and autumn show, but it is decidedly objectionable on a hot summer's day to ladies and gentlemen. The first named in particular do not admire being broiled in a large glass house, and will not go to such places to view Nature and Art. On the other hand, when exhibitions are held either in a field or park under canvas, the tents are found to be a cool and pleasant retreat on a hot day; the flowers in a cut state also last a much longer time in good condition than under glass.

The classes of this Show were fairly well filled, and the productions were generally good. In a few cases, however, the Judges withheld the awards, the exhibits not being of sufficient merit. The plants were tastefully arranged in circular groups down the centre of the large building. There were four entries in the class for miscellaneous plants arranged for effect, good plants were exhibited in the various classes, and the exhibition was artistically arranged. Ferns were not shown in large quantities, but the plants were good. Fuchsias were in better condition than any we have seen this year, the plants were fine, well bloomed, and finely developed; dark varieties greatly predominated. Coleuses were also shown in fair condition, Gloxinias were good, and Zonal Pelargoniums were very fair.

Miscellaneous collections of plants were staged, not for competition. Messrs. G. & W. Yates, nurserymen, Heaton Norris, Manchester, had an assortment which included some well-grown and choice plants suitable for decorative purposes, also a box of thirty-six Rose beds. Mr. J. Shaw, F.R.H.S., of Bowden, staged a very fine collection of *Retinospora* in pots, also *Caladiums*, *Alocasias*, and *Dioscoreas* new and old, with many other choice stove plants.

Roses were admirably shown (not for competition) by Messrs. Craston & Co., Hereford, Messrs. James Dickson & Sons, Chester, and Messrs. Dickson & Robinson, Manchester. The first named collection arrived late at the Show through some delay on the line, and for size, colour, and solidity the blooms far surpassed any of the others.

In the centre of the building a large table was tastefully laid out with dinner-table decorations by Mrs. Cussons, Birkdale, Southport (not for competition). The arrangement was light and elegant. The object of the exhibitor was to interest other ladies of Southport and district in table decorations, and we understand she purposes offering a prize next year for the best arranged table. We think she ought to be highly commended for the praiseworthy step she has taken.

The fruit was small in quantity, of a very ordinary kind, and consequently needs no special notice. The schedule contained twenty-five classes for cottagers, and the competition was good. It certainly would be beneficial for the country at large if more prizes were offered for cottagers, as they would thereby be induced to take a much greater interest in their gardens, from the cultivation of which they might derive many hours of pleasure.

The principal prizetakers in the various classes were Mr. Corcoran, gardener to G. Chamberlain, Esq., Birkdale; Mr.

Rockliffe, gardener to T. Powell, Esq., Southport; Mr. Holder, gardener to W. Bellhouse, Esq., Southport; Mr. Swire; Mr. Heaton, gardener to Mrs. Bradbury; Mr. Ferguson, gardener to W. Kellett, Esq.; Mr. Shaw, gardener to Mrs. Winder, Walton; Mr. Sutton and Messrs. J. C. and T. F. Knowlson.

The Judges were Mr. John Shaw, Bowden; Mr. Upjohn, Worsley, Manchester; and Mr. Mackellar, Abney Hall, Manchester.

## NOTES ON VILLA AND SUBURBAN GARDENING.

**FLOWER GARDEN.**—In ordinary seasons we should now commence to propagate Tricolor, Bronze, and Zonal Pelargoniums for next year, but at present there is a great difficulty in finding cuttings sufficient for this purpose. Owing to the dull and wet summer the plants have not grown with their usual rapidity, and to cut away the little growth they have made is to destroy the ornamental effect they may be able to produce during the remainder of this month. Fortunate are the gardeners who possess a reserve stock of plants to cut from. Those that have not would do well to delay the operation of propagation for a short time longer. Continue to remove dead flowers and leaves from plants in beds. Keep the edges cut closely and the beds free from weeds, so that a neat appearance of the garden may in a measure compensate for the deficiency of growth and flowers. Mixed borders are now very pretty. Sweet Williams have been bright for a long time, and are still very gay. The best varieties should be selected and marked for seed. Regulate the growths of the stronger-growing annuals, and remove all old flower stems where seed is not required.

**KITCHEN GARDEN.**—The condition of the Potato crop is now a matter of the greatest importance. The disease is spreading so rapidly that in many places around London it threatens to destroy the greater proportion of the early varieties. We strongly urge the advisability of lifting all except the late varieties, and removing them to a place where they can be laid out thinly. The ground which becomes vacant by the removal of the Potatoes should be planted with Cabbage, Kale, and other winter greens. Clear the ground of Pea haulm as soon as the Peas are gathered. The sticks should be tied in bundles and stowed away, and the ground may be dug and planted again with winter vegetables at once.

**Celery** may yet be planted for late supplies in trenches about a foot wide, but not quite so deep now as earlier in the season. Place a good coating of well-decayed manure over the bottom of the trench; in this the young plants will grow vigorously.

**Cauliflowers.**—A sowing of these may be made this week, and a second sowing towards the end of the month. It has been our practice for some years to sow about the 21st, but the seed should be sown a few days earlier in the north of England and a few days later in the south. Sow the seed on a light warm border, and if the weather should prove dry water must be given. Early London and Walcheren are the best varieties for the present sowing.

**Cabbage** seed not sown the last week in July must be sown without further delay; the best varieties are Wheeler's Imperial, Carter's Heartwell Marrow, Enfield Market, and the early Battersea. If a south warm spot can be spared a little sowing of Early Horn Carrot seed may be sown. The roots will be useful in the spring when the winter store is exhausted.

**Onions.**—The bulbs of the autumn-sown varieties are now matured and ready for storing, and the ground vacated by them may be dug over at once and sown with winter Spinach. It is advisable to make two or three sowings of Spinach a week or ten days apart, as that first-sown will grow quickly and be most useful, but will not endure the winter like the later-sown crop. The variety known as Prickly Spinach is the best for winter use. The main crop of winter Onions should also be sown. Both the Globe and Flat Tripoli are well known standard varieties. They are very useful for pulling while young, and when a good breadth is transplanted on a highly manured piece of ground large bulbs are produced by the time the winter stock is exhausted.

It is a good plan to make another sowing of curled Parsley for winter and spring use, and where the spring-sown crop has grown luxuriantly a portion of the crop may be cut somewhat closely, as the young leaves produced after this will be beautifully curled and able to withstand the winter. Make sowings of Turnips wherever a vacant piece of ground can be spared. Veitch's Red Globe is one of the best varieties. Sow Brown Cos Lettuce for a spring supply, and plant out large breadths for late autumn and winter use; also plant out Endive on a warm dry border or sheltered position. Broad-leaved Batavian Endive is very useful when well blanched, and it is also sought after by some for boiling instead of Spinach when that esculent is not obtainable.

## WORK FOR THE WEEK.

### FRUIT HOUSES.

**Peaches and Nectarines.**—The foliage of the trees in the earliest house is now dropping off, which should be assisted by gently brushing over the trees occasionally with a soft broom. Although a dry condition of the border is to be avoided when the trees are

at rest, excessive moisture at the roots is frequently the cause of premature growth, which must be guarded against. Early-forced trees do not, as a rule, make strong growth, having generally a larger proportion of single fruit buds than trees that grow under more favourable circumstances, triple buds not being nearly so frequent; hence in pruning it is not desirable to cut back next year's bearing shoots unless they are of great length. Very little pruning will be needed provided disbudding has been attended to, no more wood being trained-in than is required to replace the bearing shoots of the current year and to renew worn-out growths, as well as provide for the proper extension of the trees. Trees that have long been subjected to very early forcing are seldom vigorous, but not unfrequently become so enfeebled as to need the removal of the weak growths, which, though plentifully furnished with fruit buds, are undesirable from their affording much smaller fruit than is produced by the moderately vigorous and well-ripened growths. Any trees which grow too vigorously should be lifted, whilst those that are showing symptoms of weakness should have the old soil carefully removed from amongst the roots, replacing with fresh turfy loam with about a twentieth part of crushed bones and wood ashes intermixed. A good watering should then be given both to the lifted trees and to those that have had the soil renewed about the roots. These operations require to be performed as soon as the leaves are mature and before they fall from the trees. Trees in late houses will need frequent attention in thinning and regulating the summer growths, and if they are laid-in thinner than usual it will in a measure compensate for the deficiency of sun. Gross growths, of which there are plenty this season, must be stopped or removed altogether. Endeavour to secure a balance of moderately strong wood; and to ensure its ripening as well as to improve the flavour of the fruit gentle fire heat, especially in low and cold situations, will be of great benefit. Attention must be given to syringing until the fruit commences ripening so as to keep the foliage free of red spider, and water the inside borders as may be necessary. As the fruit is gathered from the trees in the succession houses the shoots that have borne fruit, unless required for extension, should be cut away, and all the growths where too crowded thinned out.

**Vines.**—The heavy rains and low temperature have been against midseason Grapes acquiring bloom and colour rapidly, but they are very fine in the berry; a low night temperature of 60°, with moderate ventilation, will assist the bloom and colouring process, allowing a steady rise by day with abundance of air. Muscats in the last stage of ripening will need sharp firing to keep up a day temperature of 85° to 90°, and 70° to 75° at night, and light being essential to their fine amber colour it may be desirable to stop the laterals somewhat closely. Late Grapes will need constant firing to secure their satisfactory swelling and finish; they indeed require the same temperature as Muscats. For such varieties as Lady Downes' and Muscats which are liable to scald and have not completed stoning a rather dry and warm atmosphere must be maintained through the night, with free ventilation by day. Inside borders must be attended to, and when necessary have copious supplies of water; and where the Vines are bearing a full crop of Grapes some stimulant, as a sprinkling of guano over the border well washed in, will be of advantage. Ripe Grapes that are hanging on the Vines will need gentle fires so as to admit of free ventilation, and if the wet continue outside borders should be covered with some material, spare lights being preferable. The canes of Vines in pots intended for very early forcing should be in the last stage of ripening; but if by reason of the cold unless weather they are not ripening freely, fire heat should be applied, maintaining good ventilation, and supplying no more water than is needed to secure the proper maturation of the buds that are to afford fruit. Any Vines that have the wood thoroughly ripe should be placed in the open air, but they must be protected from heavy rains. Although all lateral growth is to be checked the old foliage must not be removed, but allowed to fall naturally. Early-forced Vines will have the wood fully ripe, and should have the laterals cut away and some of the long shoots shortened back, deferring the final pruning until the foliage is nearly gone. The old surface soil should be removed and forked from amongst the roots, taking the opportunity of raising any that are deep and laying them in fresh material nearer the surface, replacing the old soil with good loam, with which has been incorporated about a fifteenth of crushed bones and wood ashes or charcoal. Give a moderate watering, and the roots will push into the new soil before winter sets in. When the lifting is deferred until the leaves fall the start is not nearly so satisfactory.

### FLOWER GARDEN.

Owing to the heavy rainfall herbaceous Phloxes are unusually fine, and considering the very accommodating character of these plants it is remarkable they are not more frequently grown not only in mixed beds but in shrubbery borders. Choice varieties should now be propagated either by division of the old plants or by cuttings, and such plants as Primroses, Daisies, Polyanthus, Forget-me-nots, Gentians, &c., may be readily increased in the same way. Lilies and Gladioli should be well supported with stakes, as in exposed situations their flower stems are liable to be broken by the wind. Columbines are fine in mixed borders. Seed

should be sown now in pans, and it will produce young plants that may be placed during the winter in a frame and planted out in spring. Sweet Williams are very showy; any choice varieties may be propagated by slips, and the best saved for seed. Herbaceous plants have grown unusually strong, and need a considerable amount of tying and regulating. Anemone seed should now be sown, and that of bulbs generally, such as Tulips, Hyacinths, Irises, Narcissuses, Fritillarias, hardy Cyclamens, &c., which may be done either in boxes or in beds in open yet sheltered situations; but is preferably done in boxes, as they can be afforded protection in winter from severe frost, heavy rains, and snow by placing them in cold frames. Polyanthus seed should be sown as soon as the seed is ripe. Intermediate Stocks should be sown without delay. Cuttings of Hollyhocks strike freely in a frame with gentle heat, shading them from sun until rooted. Insert cuttings of Pansies and sow seed, saving it from the best varieties. Flowering shrubs are making more wood than usual, necessitating the employment of the pruning knife. In new arrangements the common and free-growing shrubs should be cut in closely, so that the choicer species may have room for development. Hedges should be cut into shape; and although the shears answers well for Yew, Box, Privet, Thorn, and Berberis Darwini, such broad-leaved plants as Laurel should be cut in with a knife. Thuja occidentalis bears clipping well and forms an admirable screen. Roses as they go out of bloom should have the faded flowers removed and be cut back, and any long sappy growths shortened so as to induce their thorough ripening. Climbing varieties, such as Maréchal Niel, Cloth of Gold, Gloire de Dijon, and Climbing Devonensis, should have the old wood which has borne flowers cut out, training in sufficient of the young shoots for next season's flowering.

#### PLANT HOUSES.

**Greenhouse.**—The greater portion of the stock of Camellias will now be setting the flower buds, and may if necessary be shifted into larger pots. It is important that the operation be performed directly the buds are formed, for if allowed to become large they will in all probability fall. Avoid overpotting. As to soil, nothing answers so well as a somewhat light loam full of fibre, but where this is not to be obtained a mixture of peat and loam does very well. Moderately fibrous peat also suits Camellias, and well-reduced leaf soil with a free admixture of sand. The compost should not be broken too fine, and sufficient sand should be added to render it porous. Efficient drainage must be provided, and beyond removing the crocks and any soil not occupied with roots pot with the ball entire, employing potting sticks to make the new soil as solid as the ball. Early-flowered Pelargoniums will now be ready to cut back. The soil should be moderately dry before doing so, or the roots will be liable to suffer. Old plants should be shortened back to within two or three buds of where they were cut to last year, but young plants should be allowed a couple of buds more to each shoot. Place the plants in a light pit or frame, leaving the lights well tilted so as to admit plenty of air. A light sprinkling of water overhead may be given every afternoon until they have started into growth, then afford no more water than is necessary to keep the soil in a moist condition. Zonal Pelargoniums grown for summer decoration will continue flowering until autumn with the assistance of liquid manure. Fuchsias that flowered early should have the shoots shortened a little, an inch or two of the surface soil being removed and replaced with fresh soil. Place the plants in a house or pit where they can be kept a little close and moist by syringing overhead morning and evening; they will then start freely, and without making much wood they will come into bloom in about six weeks. If assisted with weak liquid manure they will flower to a late period. Cuttings of Fuchsias should now be inserted; they strike freely in a close frame or wherever they can be kept close and moist. When rooted they should be potted into 3 or 4-inch pots, using good turfy loam with a fourth of leaf soil and a sixth of well-decayed manure, and a similar quantity of sand. Place the plants in a light position near the glass in a temperature of about 50° at night, and in about two months' time they will require shifting into 8-inch pots.

Primulas must, without further delay, be shifted into their flowering pots, so as to have the pots well filled with roots before winter. Good turfy loam, with a fourth of leaf soil and a similar proportion of decayed dung and a sixth of sand, suits them admirably provided they are placed in a good light pit near to the glass. They require abundance of air and a thin shade in sunny weather. Cinerarias should receive their final shift, those in pots 6 inches in diameter being the most serviceable for decorative purposes, employing soil similar to that advised for Primulas, placing the plants on a cool moist bottom in a cold frame, and admit air freely with no more shade than is advised for the Primulas. Keep a close watch for aphid, as it soon spoils their appearance, and if fumigation be resorted to it must be done carefully and moderately or the foliage will be injured. Chrysanthemums must have plenty of space to admit of their having light equally on all sides, and the shoots must be well tied out, as when they are crowded they become attenuated and lose the lower leaves, the growth not being solidified as it is made. Liquid

manure must be given liberally if they are expected to make and retain good foliage as well as flower satisfactorily.

#### TRADE CATALOGUE RECEIVED.

Haage and Schmidt, Erfurt.—*Catalogue of Bulbs and Miscellaneous Plants.*

#### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

**GRAPES SCALDED (S. C. O.).**—In a note that was published on page 88, in the number for July 31st, we directed attention to the extremely succulent nature of vegetation in consequence of the absence of sun and prevalence of wet, and urged the importance of shading if necessary to prevent scorching on the sudden recurrence of sunny days. Our anticipations have been confirmed that injury of the nature indicated would follow if means were not taken to prevent it. You are one of a great number whose Grapes have been scalded by the want of a little timely shade and extra attention to early ventilation. You cannot restore the injured berries to their original freshness, but you may prevent further injury by following the advice given to "J. J. B." and others in our correspondence column of last week.

**SWEET WILLIAMS (W. C.).**—Some of the varieties are pretty, the colours being well defined, but we have recently seen flowers much superior to those you have sent us.

**REMOVING ORANGE TREES (G. T.).**—As the roots were pruned last winter and the trees have made their season's growth they may with safety be removed now and placed in tubs, care being exercised that the roots do not become dry by exposure. We should shorten the branches somewhat now, and complete the pruning in the spring, as by the retention of a considerable amount of foliage renewed root-action will be accelerated, provided—and this is important—that the foliage is kept fresh by frequent syringings, shading also for a time if needed. Drain the tubs well, protecting the drainage with fibrous turf from which the soil has been shaken, and make the compost firm. Turfy loam, with a fourth of decayed manure and a sprinkling of crushed bones—half a peck to a barrowful of soil—will grow the trees well.

**ROSES IMPERFECT (W. W. A.).**—Green hard centres in Roses is generally the result of inclement weather, which has checked the expansion of the flowers; poverty of soil, too, is a prime cause of the evil. Some varieties are more prone to produce such flowers as the one you have enclosed than others, and we have frequently seen them on old trees of this very old Rose. Yours is possibly an old tree, and if so the soil in which the roots have long been feeding is comparatively exhausted, while younger trees in the same bed have a greater store of food. If the case is as we suspect you will do well to give the Rose very copious applications of liquid manure, the thoroughly saturating the soil. This may be done at any time, and if in the autumn you remove a portion of the surface soil and apply a heavy mulching of rich manure the tree will be much benefited, and will produce finer flowers.

**GESNERIANS FOR WINTER (Exoniensis).**—Few plants are more brilliant than these in the depth of winter. *G. exoniensis* is a very fine variety, but not more useful than *G. cinnabarina* and *G. refulgens*. No time should be lost in potting the tubers. Ours were potted a month ago, and growth is just commencing. We place one large tuber in the centre of a small pot, and three smaller tubers together in other pots, employing a rough open compost of turfy loam, peat, and charcoal, embedding the tubers in sand. The pots are placed in a stove, and if they can be plunged so much the better; water is given sparingly until growth commences, and then more copiously. When the pots are fairly filled with roots the plants are shifted into larger pots, and are grown on a shelf in the stove, shading them slightly in bright weather. Thus treated they produce rich velvety foliage and fine spikes of flowers of the most glowing colours. We have them in beauty during the first three months of the year.

**LAYERING CARNATIONS (New Subscriber).**—Layering should be done as soon as possible after the grass is long enough to be pegged down easily, and in the following manner, as detailed in our manual "Florists' Flowers for the Many." A layer is a branch or shoot brought down to the ground, and when rooted separated from its parent. The materials wanted for layering are a sharp small knife, a quantity of hooked pegs (the fronds of the common Brakes or Fern are the best, though the pegs may be made of Birch or Hazel), and some finely sifted soil. When the shoots round each plant have made five or six joints or pairs of leaves, choose a dull cloudy day on which to perform the work; or, if the plants are in pots under an elevated awning they may be layered in any weather. Commence by trimming off the leaves from the bottom of a shoot, leaving the two uppermost on and entire. Trim off the lower leaves on every shoot before layering one, because when a layer is tongued it is easily broken off. When this is done take hold of the shoot, turn it up, and pass the knife blade through the third joint upwards, commencing the cut just below it; then reach a hooked peg, thrust it into the soil, catching hold by its hook of the layer as it descends, and press it gently down to the soil. Do the next in the same manner, and so on till every shoot is layered, then cover them all with the sifted mould about three-quarters of an inch deep, and that pot or plant is completed; then give a slight watering, and the layers want no further care till they are rooted, which will be in about a month or six weeks. Examine them occasionally, and as soon as roots are emitted pot them off into 8-inch pots, a pair in each; or if your space is limited and the layers small three may be put into each pot. After they are potted they should be placed under glass in a cold frame or pit, plenty of air being given in mild weather and shelter from severe frost when it occurs. Very little water is required through the winter months, and the air in the frame should be kept as dry as possible. Should damp prevail, the plants some fine day should be taken out, and a coat of fine dry coal ashes spread over the surface. The plants should then be replaced in the pit.

**CLIMBERS FOR GLAZED CORRIDOR (R. J. S.).**—*Acaea Ricana*, *Jasminum*

Poiteau, *Rhynchospermum jasmifolium*, and *Sollya heterophylla*. For back wall of the other house *Habrothamnus fasciculatus*, *Cobaea scandens*, *Lapageria rosea* and *L. alba*. Camellias would answer well, or if you wish a dense cover of green without flowers plant *Picea repens*.

**THE EDELWEISS (B. C.).**—This plant is of interest to tourists in particular and is known as *Gnaphalium Leontopodium*, *Leontopodium vulgare*, and *L. alpinum*. This plant has often been referred to in our columns, and we cite the following relative to it:—The Rev. H. Smelt, Wilcott Vicarage, Marlborough, states the following particulars of a specimen of this plant growing in the garden of that vicarage, at a height by Ordnance Survey of only 423 feet above the level of the sea. "The Edelweiss in question was brought from Lucerne in the summer of 1872; it was carried for three days in paper—the little ball of peaty earth nearly dry—in a hat-box to Frankfort-on-Main, where it was potted by a German gardener in German peat, in about the same sized pot as that known to English gardeners as No. 60, after which it had another five days with but very little water in the same hat-box to this place. On arrival it was immediately planted in the open ground. During the winter succeeding whenever snow could be obtained it was carefully heaped upon it, and in the following summer I was rewarded with one large perfect bloom. Being allowed, however, to remain too long, it lost its proper shape of a star, and grew into three very irregular asterisks of white felt. The very dry cold spring and hot burning summer of the next year agreed with it so well that it produced eleven splendid blooms, standing in a nearly a circle round the plant. These were allowed to open well, and were gathered in June, except one left, if possible, to seed. The plant is very healthy. Every tale has its moral. The moral of this is, that instead of searching for Edelweiss from 7000 to 10,000 feet above the sea, people may find it at 423 feet, and, for aught I know, lower; and, instead of breaking their limbs and bruising their persons on the rugged Alps, they may if they like walk across their own English lawns and pick it. I imagine, however, that this will go the way of most morals to tales. It is the spice of danger which makes it edible—able, and urges men and women to try and get it." *Leontopodium vulgare* belongs to the natural order Compositae (Antennariaceae), and the *Synonymia Polygamia superflua* of Linnaeus. The name *Leontopodium*, literally "the Lion's Foot," refers to the soft tufted heads of flowers. Its botanical character is founded on the same. Flower head terminal, enveloped in woolly bracts. It is single-stemmed, with leaves linear-lanceolate in form and downy on their under side. The flowers are stalkless at the summit of the stem; they are white with yellow centres, and encircled by cottony bracts. The entire plant has a grey appearance. With care it will grow on a sunny rocky in your district if you have not too much of the smoke of the large and busy town adjacent.

**PLANTS FOR SMALL GREENHOUSE (Mary).**—We suppose you wish for plants that will afford flowers more or less throughout the year. We should have a few *Camellias*—viz., *Alba plena*, *Fimbriata*, *Valtevaredo*, and *Mathotiana*. *Asclepias*.—A. Boring, Ferdinand Kegeljan, Jean Verwee, and Kaiser Wilhelm. *Speciosum* *Bolipae*, *Hysanthiflora*, *The Bride*, and *Vesuvius*; *Abutilon* *Boule de Neige*, *Asclepias armata*, *A. Elsonae*, *Correa*, *Brilliant*, *Cyclamen persicum* and *var. album*, *grandiflorum*, *roseum*, and *rubrum*, *Cytisus racemosa elegans*, *Hydrangea hortensis*, and *Thomas Hogg*, *Kalosanthes cordata*, *Rhododendron jasmiflorum*, *Stachys profusa*, and *Valloia purpurea*. In addition we should add *Fuschias*, *Show Pelargoniums*, *Zonal Pelargoniums*, *Primula*, *Cineraria*, *Tree Camellias*, and *bulbs for spring flowering*, along with a few plants of *Spiraea japonica*, *Lily of the Valley*, and *Roses*. Avoid, however, attempting too much, and above all eschew crowding.

**GRAPES DROPPING (Miss Louise).**—The cause of the decay of the Grapes is excessive moisture in the house. A drier atmosphere and increased ventilation will prove a remedy for the evil. Cut every berry out having the least trace of fungus on it, and the rest will probably remain sound. There will be no maggots if there are no decayed berries.

**ROSES FOR SMOKE DISTRICT (A Beginner).**—Only free-growing varieties can be relied on, such as *Prince Camille de Rohan*, *Comtesse d'Orléans*, *John Herper*, *Duke of Edinburgh*, *Victor Verdier*, and *Marshall Hallant*; you may also try *La France*. *Rose de Hollande* will not thrive well in smoky places, the best for your purpose is undoubtedly *Gloire de Dijon*. *Madame Williams* is also a free grower. The beautiful *Notre-Dame de France* might also succeed, as almost certainly would the valuable old *Bourbon Rose* *Bouvier de la Malmaison*. We should have them on very dwarf *Manetti* stocks, but the *Rose* last named themselves equally well, if not better, on its own roots. Order your plants early in October from a good Rose nurseryman, stating the purpose for which you require them, and also that you are willing to pay a little extra for selected plants. As you only want a few the extra cost will only be trifling, and will be wisely incurred.

**PROPAGATING LOBELIAS (Idem).**—The end of the present month is a good time for striking the cuttings. Select healthy growths and insert them in sandy soil to be kept constantly moist, placing the pots in a frame that must be kept close for a time and shaded from bright sun. Or you may cut a few plants rather closely early in September and put them towards the close of the month when they are making fresh growth. These plants, if you succeed in establishing them, will afford you abundance of cuttings for striking in early spring. Very dwarf *Lobelia* often root freely up the stems in the autumn. If such plants are divided and dibbed in boxes, partially trimming in the growth, they will, when placed in a close frame for a time, soon form healthy plants. About 100 will strike new, the cuttings being inserted in sandy soil, which must be kept constantly moist. A close frame will be suitable, and shading and frequent sprinklings must be resorted to in bright weather. As fumigation will not destroy the insects on *Chenariis* dip the plants in a solution of soft soap 2 ozs. to a gallon of water, adding to that quantity a quarter of a pint of tobacco water. Place the plants in a very cool moist frame, or in a shaded place out of doors, but not under trees. The *Cuttings* may be repeated now if they need it; but they do not require much pot room, and removing some of the old soil and top-dressing with fresh compost may be all that is needed.

**WATER LILY PLANTING (Manchester).**—The best time to plant is in spring from March until May, so that the plants may become well established before winter. The roots should be in not less than 1 foot depth of water, and not exceeding 3 feet. If the bottom be soft a stone or half brick may be secured to the root-stem with wire, and the plants be dropped or thrown into the water where required; but should the bottom be hard the plants should be planted in strong loam in shallow wicker baskets. The plants will be established before or by the time the basket decays. They must be secured to the bottom by some means to prevent them floating. There are a number of kinds of Water Lilies—viz., *Nymphaea alba*, common

White Lily; *N. odorata*, very sweet, and a variety of it, *N. odorata minor*; *N. candidissima* is noted for its pearly whiteness, *N. pygmaea* for its smallness of growth, and *N. tuberosa* for its large root-stems. The yellow Water Lily is *Nuphar lutea*, another good kind being *Nuphar advena*, and a very dwarf kind, *Nuphar pumila minima*. One of the sweetest of aquatics is *Apongeton distachyon*, which with its small form minor is also very suitable for growing in a pan in the greenhouse.

**SOWING CABBAGE SEED (Schoolmaster).**—The Fulham or Early Bottoms, Nonpareil, and Atkins' Matchless are as good as any. A sowing should be made about the 31st of July for final planting-out early in September, many plants of which will be turning in between Michaelmas and Christmas and in early spring. The second and most general time of sowing, to raise plants for almost the whole year's supply, and of any kind, including the Red Dutch and its varieties, is from the 6th to the 15th of August, and the seedlings may remain in the seed bed all the winter if not too thick, or any number may be finally planted in the open quarters from October to November, or pricked-out into nursery beds, banks, &c., so as to have a good stock of plants for final planting-out whenever favourable opportunities offer. The soil should be soaked with water twelve hours before the seed is sown, for after raking and forking it is thus rendered less liable to become hard and surface-bound. The seed should also be soaked twelve hours previously to sowing in dry weather. In hot dry weather the evening is always the best time to sow, not covering the seed more than a quarter of an inch; and the seed beds should be slightly shaded with boughs, straw, or any other article of a similar description, until the young plants are just appearing above the surface, when the covering must be removed. A slight sprinkling of water must then be applied and a top-dressing of charcoal dust, so that it may adhere to the younger plants while moist, which will not only prevent the attacks of the fly but promote growth. When about 3 inches high thin the seedlings to 4 inches apart, and prick out those removed into beds prepared as for the seed bed, planting them 4 inches apart. We never make but two plantings in the year: one from the 21st of July sowing, which planting is made during the first fortnight of September, and the second planting is made in the spring towards the end of February or beginning of March. Plant in rows from 1½ to 2½ feet smaller each way, the smaller earlier kinds being planted the closest.

**DRAINING LAND (J. W.).**—As you have only 6 inches in depth of good soil resting on a bed of clay 6 feet in thickness we should not drain deeply. Drains 3 to 4 feet in depth in soil of this nature are useless. A depth of about 30 inches (the tops of the pipes being that distance from the surface) will be far more effectual, employing 4-inch drain tiles and covering them with rubble to a depth of 6 inches, and over the rubble place coarse straw, reeds, or sticks to prevent the soil obstructing the drains. The pipes must be laid firmly and have a good and regular fall, and may be laid in lines from 7 to 10 yards apart according to the wetness of the ground. They should fall to the lowest point where a good outlet can be secured, but should not be taken straight down the ground but obliquely. In working such soil we should the first year bring up about an inch of the clay and incorporate it with the soil, the clay beneath being well broken up as deeply as possible; by continuing this practice, bringing up a little clay each year, you may, with the aid of manure, soon increase the cultivable depth of the soil. We know of no more cheap and useful boundary hedge than one of White Thorn, which if well managed forms a close and impenetrable fence in a few years.

**FIGS SHRIVELLING (Clifton).**—When trees are excessively luxuriant they are very apt to cast a considerable portion of the crop. We suspect that the wood of your tree was not matured. We should root-prune the tree in the autumn and make the soil very firm about the roots, so as to induce short-jointed wood. The growths should be thinned so that every leaf has full exposure to the light, and then, by stopping the shoots in summer after the fruit is fairly formed and watering the tree if necessary during hot and dry weather, we think the fruit will swell to maturity. You had better remove the exuberant growths now, so as to expose the shorter-jointed wood to the beneficial action of light and air.

**SEEDLING FUCHSIAS (Edward Peiter).**—The flowers are not sufficiently compact and well formed, and are inferior to varieties already in commerce.

**DISEASED GRAPES (Irish Subscriber).**—The black spots upon the green fruit of your Black Hamburgh Grape Vine is probably the disease technically termed "rust." A crop so affected cannot be cured, but a remembrance of the mischief may be avoided by the exercise of due care in opening and closing the ventilators. Cold currents of air admitted to vinerias when the Grapes are young, green, and swelling fast cause rust, for the outside of the berry is then so tender as to be easily injured. A little watchfulness will soon convince you of this. We have seen vinerias wherein all the bunches immediately beneath the top ventilators were badly affected by rust, slight traces of it being also discernible upon a few other bunches a little lower down, while the remainder were quite clear.

**CATERPILLARS ON GOOSEBERRY BUSHES (L. G. Ipswich).**—The following reply that was recently given to a correspondent is precisely applicable to your question:—The caterpillar you have sent is the larva of the Gooseberry Sawfly, *Tenthredo grossularia*. The female deposits her eggs close to the sides of the principal nervures on the under side of the leaves, which is very remarkable, for all the females of this extensive family are furnished with an instrument called the saw, for the purpose of cutting into the leaves and stalks and introducing the eggs between the cuticles or under the bark. In about a week the larvae hatch, and commence feeding on the leaf on which they are stationed, and soon riddle them full of small holes; thus they go on feeding and changing their successive skins as they increase in size, until they are three-fourths of an inch long, when they are soon scattered round the edges of a partly demolished leaf, holding by their feet legs, with their tails turned up, or lying on one side. Hand-picking is the most effective mode of riddance.

**KNOWETS (Type).**—It is the common *Malpighia*. (*B. Malpighia*).—*The New bug, Malpighia vulgaris*.

**NAMES OF PLANTS (W. D. H.).**—*Oleus* *ladaniferus*, the Gum Oleus. (*Mary*).—There appears to have been some confusion in regard to the numbering. No. 3 is *Origanum vulgare*; 4 (small spray), *Brigantes* sp.; 4 (long spikes), *Verbena officinalis*. (*W. W. A.*).—1, *Marchantia polymorpha*; 2, *Clethra furcata*; 3, *Lycopodium alpinum*; 4, *Lycopodium clavatum*; 5, *Spergularia arvensis*. (*James Shearer*).—No. 4 named last week as *Lycopodium alpinum* was, we think, *L. clavatum*. (*O. G. Roberts*).—We have received no Rose from you during the present month; if we had we should possibly have been unable to have named it, as varieties of *Roses* and other florists' flowers

are far too numerous, and many of the varieties so similar, that no one can name them except by comparing any that are sent with a large collection of flowering plants. The Zonal Pelargonium was so much crushed as to be totally unrecognisable. If your Rose is a species and not merely a variety we will endeavour to name it if we receive a flower and foliage quite fresh and in good condition. (Rose).—The purplish-flowered Orchid with the leaf attached is *Calanthe macrantha*; the other is probably an *Afrida*, but we cannot determine the species from the flower sent. *A. japonicum* is greenish-white spotted with rose. The small Paeonia-flower is too imperfect for identification. The orange flower is *Asclepias curassavica*. (Constant Reader).—20, *Crataegus macrantha*; 21, *Fagus pendula*, the Weeping Beech; 22, *Tilia platyphylloides*, the Large-leaved Lime; 23, *Lycocateria formosa*; 24, the Silver Queen Holly; 25, Waterer's Golden Holly. (A.A.).—3, *Agathis corymbosa*; 4, *Coconia platyphylloides*. The others are insufficient for identification. (A.B.).—*Adiantum pedatum*.

## THE HOME FARM: POULTRY, PIGEON, AND BEE CHRONICLE.

### THE SUMMER GRAZING OF CATTLE.

HAVING on a previous occasion referred at some length in these columns—and especially on pages 865 and 876, vol. XXXV.—to the rearing and feeding of young cattle for early maturity and for the production of what is often termed "baby beef," we now propose to allude to the advantage and profit to be derived from cattle of full age of both sexes grazing chiefly upon pasture land, and incidentally upon the selection and treatment of the animals in a comparatively probationary state before the pastures are sufficiently clothed with verdure to maintain them in a fattening condition throughout the summer months. Our first point is that a considerable portion of the grass land in various districts of the United Kingdom is sufficiently rich and productive to keep a bullock and fatten it without any assistance by oil cake or other artificial or concentrated food. There is, however, a much larger portion which is just the reverse; and in order to graze bullocks with profit in the latter case it is desirable, not only for the successful fattening of the animals that they should receive a liberal allowance of oil cake or other feeding material, this is also of great importance in maintaining and improving the grass land whereon they are fed. The best districts of land for the fattening of cattle upon grass alone, without assistance by other food, is found in some of the river valleys which have never been ploughed and are composed of fine alluvial soils of various strata, some being so rich that for a long series of years the occupiers have continued to fatten the cattle upon the grass produce only—in fact, taking all the produce away in the shape of beef and returning nothing to the land. In such pastures it is often found that the subsoil is composed of strata rich in phosphates and potash, the latter more particularly in some strong clays. As an instance of the fertility and fattening properties of some of these rich alluvial soils, we recollect a friend of ours about twenty-six years ago purchasing in a local market in a southern county at Christmas time a pair of large half-fattened North Devon bullocks. These he turned into a pasture with a hovel in it, where they were fed with hay and water only, until the grass became fit for feeding in the spring, when they were allowed to graze without any assistance by cake or other food until the autumn, when they again began to receive hay only as before until Christmas. They were then sold in the same market at which they had been purchased the previous year, thus having been kept with grass and hay the produce of one pasture only, one portion being fed, the other out for hay. The cost price of these two animals was £64, and after a twelvemonth's feeding they made £64 each. We name this as a remarkable instance of what the richest grass land will do unaided by artificial food, the advantage to the grazier thus being 12s. per week per bullock, a profit which is seldom exceeded under the like circumstances.

Although we have just alluded to a pair of North Devon oxen we do not by any means recommend these for feeding in preference to other breeds for profit. The best guide to the home farmer is generally to look to the breed of animals usually fed in any particular neighbourhood or district where the farm is situated; therefore we will say Devons in the south-western counties may be kept, Sussex in the south-eastern counties, also the Herefords in the west midland counties, Aberdeens in the best Scotch counties, and Shorthorns everywhere. We must

therefore conclude that in the absence of any other breed we may, without any hesitation, take shorthorned cattle for fattening upon any pastures, except the highest mountain districts, throughout the United Kingdom. At the same time the Shorthorns, from their general approval by the graziers, are to be obtained in almost every district. Another leading point is that after being made fat the Shorthorns are more generally approved by the butcher than any other breed for the ordinary trade of the country.

After having selected and purchased our cattle for grazing on the pastures in the following summer we prefer to take some of them into keeping in the early part of the winter, so that the animals may become acclimatised and forwarded in condition. Whether we have selected worked oxen, or young steers, or barren cows, they should be kept in yards made comfortable for them by shelter sheds, and properly bedded and littered with straw or other materials as cleanliness requires, taking care, however, to have the yards always earthed at bottom, not only to absorb the urine but to ensure a drier and healthier lair for the animals. During the time the cattle are fed in the yards it is customary to feed them upon farms where there is a portion of arable land through the winter with chopped straw and roots pulped in admixture. Upon farms, however, without arable land it is usual to feed them with hay chaff mixed with oil cake, cotton cake, beans, barley, or maize meal. This mode of feeding will have brought them forward enough in condition to enter upon grass feeding in the spring with great advantage. They will, if fed as above stated, have laid the foundation of lean meat, and be in a condition for laying on the fat whilst feeding on grass only in the pastures; and they will at the same time, having been in the yards during the winter, have made a large quantity of valuable manure if care has been taken to bed and litter them properly. When, however, the cattle leave the yards entirely, which they will usually do in ordinary seasons about the first week in May, it must be considered whether the pastures are of first quality or only second rate. In the former case the bullocks will require nothing but the grass with free access to good water and rock salt at all times; but in the latter case, where the pastures are comparatively inferior, the animals will require assistance by feeding with cake or meal as before stated.

Thus it becomes a question when cattle are feeding on the pastures how they should receive their cake or meal. Where roots are available mangolds should be held over for summer use, for there is no better or more economical method of giving meal than in admixture with cut mangolds or other roots. In the case, however, of there being no mangold reserved or grown the cake is frequently laid in little heaps upon the grass ground. The animals soon learn to eat it in this manner, and although it is a slovenly way of feeding it is simple and gives less trouble than trough feeding; and the cattle, when they become accustomed to get their cake in this way, will eat and lick it up quite clean. In some situations, particularly in the mild climate of the southern and south-eastern counties, the animals will require some shelter and shade during the hot and sunny days and to protect them from the flies, which in some districts are extremely annoying to the cattle, and irritate them so much that it is quite impossible for them to thrive as they should do. On some farms trees are left on the pastures for shade. This is, however, in our opinion, a very erroneous plan, because when the animals resort to the shade offered by trees it does not protect them from flies, nor does it preserve the dung dropped by them; but, on the contrary, the dung is left under the trees, where it does no good. In our estimation this is an important matter, and particularly when the cattle are having cake or corn, which should go to benefit the grass land as well as assist in fattening the animals. To meet the requirements for shade and shelter, and feeding cattle whilst feeding on the pastures, we have designed and erected upon several estates elongated sheds, which are placed in such a central position as to be accessible to the cattle when feeding on any adjoining pastures; and as they become accustomed to be fed there once a day with cake, corn, &c., they the more readily take to the building for shade or shelter as they may require. The building should consist of a shed of such length as may be required, having reference to the number of cattle to be accommodated, the width being 16 feet, with a feeding path 8½ feet wide, divided and railed off into 12 feet by 12 feet boxes sufficient for two bullocks, with a store room at one end for hay, straw, roots, cake, or corn. The building should be thatched with reeds or straw, as being cooler in summer than either slates or pantiles. The floor of the boxes may be excavated 1½ foot deep and filled with earth for littering with straw and accumulating manure, or may be filled with ashes or peat to absorb the urine, the solid dung being removed as cleanliness dictates to a manure heap. In either mode of management the manure is in a convenient place for applying to the adjoining pastures.

(To be continued.)

### WORK ON THE HOME FARM.

*Horse Labour* will still be employed at every opportunity in the tillage of the farm, either preparing for late turnip crops, rape, or



mustard, &c., also horse-hoeing, and the interculture of root crops generally. Horse labour will now be required for the reaping machine in the early districts. Winter oats, rye, the Canadian and other early white oats, will be forward enough for cutting; and in order to make long days at this work, now the reaping and tying machine is come into use, it will require change of horses. The work is severe for the animals, and in order that the work may proceed without delay each relay of horses should not be worked beyond four hours at a time. The tying with wire has been objected to, and yarn or twine is now recommended instead; but in point of fact wire need not cause any difficulty, because in cutting the wire at the time of threshing the sheaves, it is now removed by the instrument used in cutting, and none will be found in the straw when properly attended to at the time of threshing. Carting of hay and stacking will still be going on in pasture districts, and also upon the water meadows where sheep had fed early and that were laid up for hay afterwards. The cost of labour in mowing, &c., in the water meadow where the mowing machine cannot be used is a great drawback to such pastures as compared with the value of produce of such land at a former period when labour was cheaper and more plentiful, especially the labour by women and boys. The interculture of root crops will still require constant attention by horse-hoeing, the weeds having been so abundant this year amongst the root crops, and the weather so much against their destruction, it will increase the labour for a much longer time, in fact up to the time when harvest is commenced. The home farmer should remember that it is best to have as much of the root crop set out and cleaned before harvest commences, all such being done at nearly or quite double cost during the harvest periods. In fact, it is frequently impossible to get such work done at all when harvest work is going on. All the late-sown turnips will probably require hoeing by hand during the harvest, but in those cases where hand labour is scarce the horse hoe may be used with great advantage and economy both between the rows and across them. In cutting out the roots crossways it leaves the plants in breaches, but nevertheless it saves them from being stunted, and maintains them in a growing state until the hand labour can be obtained for singling and finishing off the work. In setting the hoes to work crossways we use three cutting shares like the centre share in an ordinary horse hoe, in fact such as we use in horse-hoeing wheat when drilled at 12 inches; the shares then each cover about 8 or 9 inches.

*Hand Labour* should be cleared up as close as possible to the commencement of harvest. For instance, where it is intended to sow stubble turnips, as fast as the corn is cut the manures required for drilling should be got ready and mixed with ashes, so that no time may be lost in light work and trivial matters during the harvest. The hiring of a sufficient number of hands for harvest work should be attended to immediately, and an arrangement made as to the prices to be paid for labour. These matters are more particularly necessary in those situations where labourers are rather scarce, and where the labour required in harvest time is far beyond the usual staff of men and women usually employed upon the home farm. We urge this matter of obtaining sufficient labourers in order that the horses may not stand in the stables or be turned out to graze in the early part of the harvest, for the purpose of having the teammen and boys at liberty for harvest work; for we consider that the value of horse labour during the first week or ten days of the harvest is of as much or more value in the fields than at any time in the whole year, because in case of no stubble turnips being sown the autumn tillage by the scarifier may be begun in preparation for root crops for the next year. Instead of sowing stubble turnips in a late harvest like that which we are now anticipating, it will be well to sow the trifolium of the different varieties immediately the corn is cut, and harrow-in upon the corn stubbles, &c., between the stooks or pooks of corn. In this we may hope to avoid the slugs, the greatest enemy we have to contend with in trifolium cultivation. The shepherd and cattle-men will now be fully employed, and be required to feed the sheep liberally, and particularly the Down ewes, which will now have the rams with them. In case the ewes are in low condition or feeding on bare keep in grass, it will be necessary to give them a daily fold of rape or mustard, and a few cracked beans if it is desired to have early lambs. The yearling-off heifers, too, should be liberally fed with a constant change of pasture, selecting the highest and driest land for the night lair; they will then probably offer to the young bull which should now be with them, and this is desirable so that they may bring their first calf in the May month. The calves, too, of various sizes must be properly fed and cared for, when they are quite young as weaners they will get milk and meal only, except a little sweet hay to pick, or if turned out at daytime to learn to eat grass it should be in a dry sheltered paddock, and if with a hovel in it so much the better in wet or stormy weather. Cabbage seed should now be in beds for planting in the autumn and early spring.

### THE FORTHCOMING DAIRY SHOW.

THE prize list of the fourth annual Dairy Show, to be held in London by the British Dairy Farmers' Association on the 18th

and four following days of October next, contains offers of plate, money, and medals to the estimated value of about £1600, and is divided into live stock—comprising dairy cattle and goats, poultry and Pigeons; dairy produce, including clotted cream and dairy salt; dairy utensils, comprising apparatus for cheese and butter-making, vehicles for conveying milk, milking machines, and cow-house fittings; and finally models and drawings of dairy home-steads. Several alterations and additions are noticeable in comparison with the schedule of last year, the most important of which are the following:—

**COWS.**—In Shorthorns, not eligible for the Herd Book, four prizes are to be awarded instead of three, and the entries will be made singly and not by pairs. The "any other breed" class, both in cows and heifers, will admit pure specimens only, in hopes of bringing forward Devons, Dutch, and other good milking varieties, the "crossed or mixed" having then a class to themselves. The class for "any other breed of bulls" is similarly changed to any other "pure" breed.

**GOATS.**—An extra class is provided for "maiden" goats over twelve months and under two years, with a view to discourage the practice of too early breeding. A silver medal is offered for the best kid.

**CHEESE.**—The Stilton class is open to makers only, and the prizes doubled in value to encourage manufacturers. An additional class appears for "loaf cheese," and one for cream or soft cheese. *Fair.*—Entries here are also restricted to makers this year, and the first prize is a gold medal and £10, instead of a silver medal and £80. The champion prize is done away with in the cheese classes and fair, it being justly considered impossible to designate the best cheese out of so many different kinds. *Foreign.*—This is classified under the various known varieties in this country, such as the Roquefort, Gorgonzola, Gruyère, Parmesan, Edam, Gouda, and Soft Cheese, instead of the plan previously adopted, as French, German, &c., thus offering fair competition in each class between specimens of the same kind, which before could not possibly be done.

Clotted cream is now added, with a silver and bronze medal as prizes for the two best samples of not less than 8 lbs.

**BUTTER.**—*Fresh.*—In order to better apportion the prizes to the number of entries, butter made from the milk of Channel Islands cattle, which has generally the advantage over other makes, is classified by itself, the remainder being subdivided into lumps of 2 lbs. and prints of 1 lb. *Cured.*—Scotch and Welsh this year will compete together in the "any other variety" class. *Foreign* forms but two classes—"fresh" and "cured," instead of "fresh, salted, or preserved" being all jumbled up together under the names of the various countries whence they are sent, which has hitherto resulted in a series of empty classes.

Dairy salt forms a novelty this year, the prize being a silver medal. The quality is to be judged by analysis.

**DAIRY UTENSILS.**—Medals are offered for the best collection independently of those shown in action, thus having a class to themselves. In cheese and butter-making the fees are reduced from £5 to a guinea in order to encourage manufacturers to compete.

Milking machines, with a silver medal as prize, are also a novelty on this occasion.

Vehicles for the conveyance of milk have three classes instead of one, being divided into those for station purposes, for retail delivery, and for perambulators or trucks.

Models and drawings will be designed this year for the accommodation of from twenty to eighty cows instead of from fifty to one hundred, and the fee of entry is reduced by one-half. One great feature in the schedule is the reduction of entry fees to members of the Association, by which subscribers are allowed the advantage of 25, 50, and in some instances 85 per cent. discount upon the fees of non-members.

Schedules may be obtained of the Honorary Secretary, Mr. H. S. Holmes Pegler, at the offices of the Society, 446, Strand, London.

### MOULTING.

WE have before written about moulting, but as the season comes round we find it well to remind our readers of the special points to which care should be given in the poultry yard. We should expect fowls to be late this season in going into the moult; summer heat generally hastens it, and of that we have had little enough as yet. At the last show, too, which we saw late in May, birds were in much better plumage than they usually are at that time of year. Our birds have thus far, however, been most irregular in beginning to change their feathers; some have been quite ragged for a month, others are still in plumage fit for the show pen. The year is strange, and many things come about contrary to expectation. As far as our observation goes the birds which have been early to lose their feathers are those which have warm houses into which they are shut at night, and in which they consequently pass many hours in a much higher temperature than that of the external air; those still in plumage are the birds which roost under rough sheds and feel the cold and damp of night.

Moulting may be hastened or retarded, therefore it is useful to observe the month in which we find it best for poultry to moult. It is common to hear fanciers say in June, "See how well my birds are going into the moult." For our part we prefer the birds not to lose their feathers till the middle of August, especially the hens, for we have observed that if they begin to do so earlier the moult is almost always a partial one only, and they generally then fall into another in November, just when the exhibitor wants them to be in good plumage for the great shows, and they remain weak through the early winter when everybody wishes hens to lay. With cocks the moult is a different matter; the re-formation of tail and hackle feathers takes a long time, and the operation is rarely repeated in the same season: the sooner therefore that they begin to drop their strong quill feathers the better. Those cocks seem to go best through the strain which first lose those feathers, and then when the new ones are half grown drop all the body feathers at once; these are rapidly replaced, and the birds' full plumage is seen altogether in its fresh beauty.

How are we, then, to hasten the operation when we desire to have the birds in plumage for the autumn shows? We should separate cocks and hens now, and take care that all go into their houses at night. The former we should place in enclosed runs, small and warm quarters seem to promote the moult. Care must, however, be taken to keep all birds out of the sun when the fresh hackle and saddle feathers are coming; it would be sure to tinge all pale and delicate, and indeed almost all colours, and spoil them for the season. The moult of hens of all sitting varieties may be much more easily hastened. By this time of year they become broody after laying small batches of eggs; let them amuse themselves with sitting for a month on a china egg or two. If they are then taken off the nest and shut up for a few days in an exhibition pen they will go to pieces all at once, and we always find that hens which do this, even though they look for a week or two like naked skeletons, pass best through the moult and come most quickly into full plumage. Those who require autumn chickens for winter use can give their hens some real eggs now in lieu of sham ones; the effect will be the same, only that they will moult a little later. They will be all the better for the good food which they will get with the chickens and for the warmth of the coop. It is a good plan to rear crossbred chickens at this time of year; the great strength thrown into the constitution by a fresh cross enables them to resist the chills of autumn. For this purpose the cocks, instead of being isolated, may have one or two hens given them of some other sort and of no great value. We think it unsafe ever to put hens of great value as stock birds with a male bird of a different breed.

As to food to stimulate the moult special diet is rarely needful, and, as we have often said, we abhor stimulants. Iron mixture in the water is very useful and should constantly be given. A minute quantity of saffron, too, may be boiled in water, and a few spoonfuls of the decoction occasionally put in the water. If the cocks become very pale in comb they may have a little Spratt's food mixed, according to directions we have often given, with other meal; but avoid stuffing them, because they are moulting. We have known obese and useless birds quite cured by reduction; on the other hand, we have seen several instances in which peculiarly fine cocks have been fed highly with bread and ale and other dainties to get them on, and have died in sudden fits just as they were attaining full beauty and were entered for Birmingham or the Crystal Palace. Hens, too, should have the iron tonic, but not any stimulant at all. Such foods only make them produce eggs instead of feathers, and excite them when the system should be somewhat dormant.

Occasionally it may be wished to retard the moult of a hen for a September show; we object altogether to show at this time of year. Still, if this should be necessary, and some hen promises to retain her plumage, separate her from the cock entirely, let her roost in a cold place, give her no nest egg, remove those she lays daily, and should she show the slightest inclination to become broody turn her off the nest at once. We have occasionally kept a hen in plumage in this way; but the probability is, that should the show room be hot, when the judge comes round in the morning a sudden moult will have come on, and the bird will be standing on a regular feather bed of her own down. We have known instances in which inexperienced exhibitors have put down such metamorphoses to foul play, and have fancied that their favourites had been plucked!—C.

#### VARIETIES.

DURING the past few days the weather has considerably improved, and has had a marked and beneficial effect on the grain crops, as well as having facilitated the securing of hay, which for many weeks has been exposed in the fields. In the south of England the corn is at last "changing," and an Essex correspondent informs us that harvest has commenced on the light lands of that county by the cutting of rye. Wheat crops in the same district—that is, on light soils—are looking well, as also is barley; but on heavy lands weeds predominate, and the harvest, even under the most favourable weather influences, must be a very un-

satisfactory one. Root crops, too, are extremely late and poor; and potatoes, except the latest sorts, are almost wholly destroyed by the murrain.

— AT a recent meeting of the Council of the Royal Agricultural Society the Finance Committee reported that the balance at the bankers on July 31st was £15,711, and they recommended that the Secretary be authorised to sell out £10,000 New Three per Cents, now standing in the name of the Society, to meet the claims arising from the Exhibition at Kilburn. In presenting this report Colonel Kingscote said it had been found impossible to state the exact loss resulting from the Exhibition, but so far as could be ascertained it would come to about £10,000.

— IN some of the old poultry books allusion is made to "hen-cocks"—i.e., fowls which were apparently neither cocks nor hens. This has often been derided as a mistake, and it has been asserted that such are always old hens which have partially assumed the male plumage. We have this year frequently seen a young bird which is apparently an instance of the abnormal monstrosity. It is a Silver-Grey Dorking with the head and expression of a hen, but the plumage of a cockerel. It carries its tail somewhat low, but is fast assuming the hackles and mature plumage of a cock.

— THE VALUE OF BEES.—A bee-master of repute, the Rev. M. Sauppe, in Lückendorf, makes the following calculation, intended to prove the great agricultural and economical importance of the rearing of bees:—Of each of the 17,000 hives to be met with in Saxony, 10,000 bees fly out per diem—equal to 170 millions—each bee four times, equal to 680 millions, or, in 100 days, equal to 680,000 millions. Each bee, before flying homeward, visits 50 flowers, therefore the whole assemblage has visited 8,400,000 millions of flowers. If out of the ten only one flower has become fertilised, 840,000 millions of fertilised flowers would be the result. Supposing the reward for the fertilisation of 5000 flowers to be one German pfennig, the united bees of Saxony have obtained per annum a sum of 68 millions pfennige—680,000 marks (£84,000 sterling). Each hive represents in this way a value of £2 sterling.

— WE understand that Spratt's patent food will be supplied to the animals at the forthcoming National Show of sporting dogs at Birmingham. This food is being supplied to the dogs at the present Birmingham Hound Show, and gives great satisfaction.

#### TAKING BEES TO THE MOORS.

HEATHER, it is well known, yields honey in great abundance. This plant flowers freely, generally speaking, and comes into blossom in August when clover, limes, and bramble bushes have passed their flowering season. Heather is of some, nay, great importance in apiculture. In favourable seasons it gives the bee-keepers in many districts the chance of an additional month of honey-gathering. In such seasons when the bees are taken to the moors they have a time of activity and noise; they gather abundance of honey; the outdoor workers seem to be in a tremendous hurry to accumulate stores, running out of the hives and flying off to the heather as fast as they can. Hives speedily become heavy; breeding recommences; the indoor workers are overtaken, and cannot carry aloft and store away all the honey that is brought to them. A wet day or two interfering with outdoor labour is not all loss and hindrance, for the bees in such days attend to home duties—carry aloft the accumulations of honey and lock it up. In this way the arrears of indoor labour are met and removed, and preparations made for the reception of future accumulations. Any observant bee-keeper cannot fail to remark how fast the bees of strong stocks with empty cells work when honey is abundant, and also after a short time of rest during a flush of honey.

The practice of removing bees to the moors is common and general in Scotland and Germany, but not so common in England, still many apirians here resort to it with advantage. In many counties, both north and south, the heather of England cannot well be surpassed for excellence. Here, in this north corner of Cheshire, we are about twenty miles from Delamere Forest, in which there are thousands of acres of excellent and accessible heather; and about the same distance from the Glossop Moors, which may be said to be ranges of hills in Derbyshire, clad with heather. We have hitherto preferred the moors of Derbyshire, and our bees have been taken there nearly every season for sixteen years.

Our hives have cross sticks in them, and can bear pretty rough handling or treatment by the way. To guard against suffocation is the only necessary precaution in our case. The hives are well ventilated by placing over their doors and crown holes fly-proof wire, and in this way fresh air is admitted and thorough ventilation given to the bees during the journey to and from the moors. Without good ventilation suffocation is likely to result, for when the doors of hives are closed all natural ventilation ceases. Some bee-keepers ventilate their hives by tying thin towelling over their mouths, and raise them off their board about 2 inches. There are other modes of ventilation, and probably everyone thinks his own plan the best.

The time to remove bees to the moors depends on the season. In 1868 we took ours on the 24th of July, and were not one day too soon; again we have been as late as the 20th of August, and were not a day too late. This year the heather, indeed every kind of crop, is unusually late; and when we remember that almost every season the weather fails before the heather, that very seldom after the first ten days of September do bees gain in weight even though the moors be clad and bright in their purple robes, we are compelled to consider this season whether it is or is not advisable to take care. Evidently the heather will not be in full flower till September this year, and if the present rainy weather continue much of the heather will not blossom at all, or not blossom to be of advantage to bees. The bees in Scotland have hitherto done but little good on the clover this year by reason of the cold rainy weather, and almost all the bee-keepers I met there intend, or did intend when I left them, to take their hives to the heather. Having known hives gather 50, 60, and 70 lbs. each on the moors in a short time, I dare not advise anybody not to take them this year. For me to take mine would be an adventure. The expense would be about half a crown per hive, the risk of losing bees during stormy weather very great, and the prospect of gain but small. Half a crown will buy 10 lbs. of good sugar, and this boiled into good syrup and properly administered to a hive will be about enough of food for a hive of ordinary numbers or strength till the spring of next year. A great philosopher in our township, I am told, predicted that this year, 1879, would be one of calamity by reason of spots on the sun. It certainly has been a year of disappointment to bee-keepers, but let us hope that the spots will be off the sun before he makes his appearance in March, 1880, and that a good season will follow.—A. PATTIGREW, Sale.

### BEES AT THE BIRMINGHAM SHOW.

THE Rev. Herbert Peel seems to have set before him the establishment of a bee-keepers' association in every county in England and with a view of setting the ball rolling in Warwickshire he, in conjunction with Mr. Villiers Blakemore, determined to hold an apicultural exhibition at the annual show of the Birmingham Botanical and Horticultural Society, by whom the prize money in this case is provided. To the kindness and energy of the latter gentleman much is due, while he must be gratified at the intense interest excited by the Exhibition.

The hives, with but one or two exceptions, call for little comment beyond what they have already received in these columns in our reports of Milburn and South Kensington. Mr. Fuggle, however, in Class C, for the best and cheapest hive for cottagers' use, shows a really good article, well made in yellow deal with sections and super cover, for 10s. 6d. The sections are arranged thus:—On the hive sides, when the sections are in position, rests a wooden frame about 4 inches deep. This frame is, in fact, an extension upwards of the hive proper to give room for super honey. Over this frame are placed as a cover seven slats which touch at their edges, and on the under side of the slats are fixed the sections by a single screw, so that the lifting of the slat brings up two sections with it, and at the side of these a dummy is used to give lateral movement, and thus facilitate the removal of the boxes when filled. The plan is simple, and is more likely to be worked successfully by cottagers than many we have seen. This hive deservedly stands first, while Mr. Green makes an excellent second with his Cottage Myrtle, with which the readers of this Journal must be familiar. In honey nothing worthy of remark was shown, nor could indeed such be expected with such a season as we have experienced.

In the driving competition the times were wonderfully short, Mr. C. N. Abbott driving and transferring in 9 min. 45 sec., Mr. Walton in 11 min. 55 sec., and Mr. J. Abbott in 12 min. 55 sec. The great attraction of the Exhibition was, however, the bee tent in which Mr. Cheshire lectured to crowded and delighted audiences, Mr. Walton acting as his operator. The manner in which the bees were handled filled all with extreme astonishment, while the descriptions of the wonders of the anatomy of the insect and its marvellous adaptation created so much interest that the accommodation the tent afforded was sorely taxed, hundreds waiting for admission at the close of each display. At midday on Saturday Mr. Cheshire lectured through an interpreter (Mr. Fowler) to the deaf and dumb school, whose power of communicating to the children was as marvellous to the onlookers as was the tameness of the bees to them.

The primary object of the gathering has been achieved, in that many have signified their intention of joining the proposed Association, while Mr. Bower has been requested to accept the hon. secretariat. If he accept, as we are given to understand he is likely to do, the Warwickshire Bee-keepers' Association may be regarded as a *fait accompli*.

### OUR LETTER BOX.

YOUNG RABBITS DYING (H. S.).—The age at which your Rabbits die suggests that from some cause or other they are unable to pass through the

period of moulting. Rabbits are born with fine, curly, woolly, dull fur darker than that they will have when older. About the age of from thirty to forty days this fur falls off, and it is replaced by a permanent fur that gives the foundation and the particularities of its coat. This crisis of nature passes unperceived if the Rabbits are kept warm, clean, and the mother has been well fed to allow of her being a good nurse. Separated from their mother they must have food composed of grains and green plants. If moulting is not a disease it is, nevertheless, a crisis of nature which happens at teething, and which may give rise to many symptoms and affections. Convulsions occur when moulting does not take place at the time prescribed by nature; the Rabbit becomes low without appetite, and it is not rare to see it seized with convulsions, which succeed each other by frequent fits, and which cause death within twenty-four hours. Treatment.—The dissection of bodies shows discoloured tissues—a red liquid in the intestines. The treatment consists in keeping them warm with fifteen grains of camphor a-day, and as soon as they can eat give them watercress and a little boiled barley with a little salt.

FEEDING FOWLS (E. R. F.).—There is no advised proportions in mixing maize or crushed oats with boiled vegetables. The more of the corn that is given to the fowls the more their fattening is promoted. We should not add more than one pound to seven of the vegetables.

RENOVATING MOIST MEADOWS (A. O.).—In the case of meadow land lying too low to be drained, we have had some instances of improvement having been effected by the addition of road scrapings or clean fine gravel, if the land is peaty, laid on and spread several inches deep. This application of compost, &c., will make the land firm and more productive; but in the event of manure being required, we recommend a top-dressing of 4 cwt. to 6 cwt. of mineral superphosphate per acre. We have lately had an illustration of this where the pasture laid low and cold, and the small fine rushes predominated in the herbage; yet, since we have applied the above named dressing, the cattle graze so closely that they eat the rushes now as well as the grass.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 52' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain.
1879.	Baromet- er at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
July.		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
We. 6	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Th. 7	29.759	60.5	55.2	S.S.W.	58.5	68.0	50.9	194.4	47.9	—	
Fri. 8	29.828	60.4	53.5	N.W.	59.0	70.6	51.9	191.9	47.7	0.078	
Sat. 9	29.857	60.6	56.0	W.	59.5	67.8	55.0	196.8	54.5	—	
Sun 10	29.915	59.4	50.6	N.W.	59.6	66.8	51.3	118.2	48.6	—	
Mo. 11	29.922	60.3	53.4	N.W.	59.0	70.2	45.9	98.7	40.6	—	
Tu. 12	29.910	60.0	51.0	N.N.E.	59.4	73.1	56.2	106.8	50.9	—	
	29.908	61.5	61.2	S.E.	60.1	74.6	55.4	122.7	51.3	—	
Means	29.912	60.5	56.1		59.5	70.9	52.2	114.1	48.7	0.079	

### REMARKS.

6th.—Cool but fair; not much sunshine; very slight shower 2.30 P.M.  
7th.—Fine sunshiny morning; overcast by 2 P.M.; shower at 3 P.M.; heavy shower at 3.50 P.M.; wet evening.  
8th.—Fair throughout, but very dull.  
9th.—Very dull in early morning, afterwards fine bright day.  
10th.—Fine bright morning, but from 10 A.M. very thick and fog-like; very little sunshine after 11 A.M. but no rain; very calm.  
11th.—Fine bright morning; cloudy during the day, at times very dark and stormy-looking; very calm all day; starlight night.  
12th.—Very fine bright day; hot sun, but cool pleasant wind.  
A fine dry week, but cooler than the previous one, and rather below the average for the time of year.—G. J. SYMONS.

### COVENT GARDEN MARKET.—AUGUST 18.

THIS warm weather is sending the soft fruit in fast, and this week will see the bulk of it. Demand has been good at improved prices.

### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	0	0	Melons.....	each	3	0	0
Apricots.....	dozen	2	0	0	Nectarines ..	dozen	3	0	0
Cherries.....	box	0	8	0	Oranges.....	100	4	0	0
Chestnuts.....	bushel	12	0	0	Peaches.....	dozen	3	0	0
Currents.....	1	0	0	0	Pears, kitchen..	dozen	0	0	0
Black.....	1	0	0	0	dessert.....	dozen	0	0	0
Figs.....	dozen	3	0	0	Pine Apples ..	1	0	0	0
Filberts.....	1	0	0	0	Plums.....	1	0	0	0
Cobs.....	1	0	0	0	Raspberries ..	1	0	0	0
Gooseberries...	1	0	0	0	Strawberries ..	1	0	0	0
Grapes, hothouse	1	0	0	0	Walnuts.....	bushel	0	0	0
Lemons.....	100	4	0	0	ditto.....	100	0	0	0

### VEGETABLES.


	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	2	0	0	Mushrooms ..	pottle	1	0	0
Asparagus.....	bushel	0	0	0	Mustard & Cress	punnet	0	2	0
Beans, Kidney ..	1	0	0	0	Onions.....	bushel	2	6	0
Beet, Red.....	dozen	0	1	0	Pickling.....	quart	0	4	0
Broccoli.....	bushel	0	9	0	Parley.....	doz. bunches	2	0	0
Brussels Sprouts	1	0	0	0	Parsnips.....	dozen	0	0	0
Cabbage.....	dozen	1	0	0	Peas.....	quart	0	9	0
Carrots.....	bunch	0	4	0	Potatoes.....	bushel	3	6	0
Cauliflowers ..	100	1	0	0	Kidney.....	bushel	4	0	0
Cauliflowers ..	dozen	0	0	0	Radishes.....	doz. bunches	0	0	0
Celery.....	bushel	1	0	0	Rhubarb.....	bushel	0	0	0
Coleworts.....	bunches	2	0	0	Salsify.....	bushel	0	0	0
Cucumbers.....	each	0	4	0	Scorzonera.....	bushel	1	0	0
Endive.....	dozen	1	0	0	Seakale.....	basket	0	0	0
Fennel.....	bunch	0	0	0	Shallots.....	1	0	0	0
Garlic.....	1	0	0	0	Spinach.....	bushel	2	6	0
Herbs.....	bunch	0	0	0	Turnips.....	bunch	0	6	0
Leeks.....	bunch	0	2	0					

## WEEKLY CALENDAR.

Day of Month	Day of Week	AUGUST 21-27, 1879.	Average Temperature near London.		Sun. Rises.		Sun. Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	h.	m.	h.	m.	h.	m.	h.	m.			
21	TH	Sevenside and Reading Horticultural Exhibitions.	72.5	49.7	4	56	7	10	9	46	8	1	4	3	233
22	F		71.6	49.7	4	58	7	8	11	12	8	23	5	2	234
23	S		71.2	49.9	4	59	7	6	0	38	8	51	6	2	235
24	SUN	11 SUNDAY AFTER TRINITY. [mittens at 11 A.M.]	71.0	49.9	5	1	7	4	2	1	9	31	7	2	236
25	M	Royal Horticultural Society—Fruit and Floral Com- m. of Thanet Horticultural Exhibition.	74.1	48.7	5	3	7	1	3	14	10	23	8	2	237
26	TU		72.5	48.4	5	4	6	59	4	12	11	29	9	1	238
27	W		73.3	49.1	5	6	6	57	4	55		morn.	10	1	239

From observations taken near London during forty-three years, the average day temperature of the week is 72.5°; and its night temperature 49.1°.

## LIFTING AND RENOVATING VINES.

 WHEN the lifting of Vines is deferred until the leaves fall the start is not nearly so satisfactory," is a sentence of considerable importance which I extract from the practical instructions given in "Work for the Week" of your last issue. Having lifted Vines at different periods of the year—namely, in summer, autumn, winter, and spring, and having adopted various modes of renovation in dealing with Vines and Vine borders, I may perhaps usefully communicate a little of my experience on this subject. When I was a much younger man than I am now, and intensely in earnest in gathering knowledge on practical gardening, I remember with what pleasure I read articles in the old "Cottage Gardener" when they appeared just in time for the instructions contained therein to be carried out; and, on the other hand, how disappointed I was when an article was published just too late to be of use to me. I therefore refer to the subject in hand now, not because I feel that I have anything new or of great importance to record, but mainly because what I have to say shall be said in good time to be of use, if any use can be extracted from my observations on lifting Vines.

Grape-growing is either one of the greatest pleasures or the greatest troubles of the gardener—pleasure when the crops are good, and he is proud of showing them; trouble when they are a failure, and he is afraid of visitors seeing them. In some cases where Grape crops are notorious for their inferiority the fault rests with the manager; in other cases the failure arises from causes beyond his control. If a gardener has well constructed and efficiently heated vine-ries provided, has abundance of good soil at his command, and has had full liberty to carry out his plans without hindrance for a number of years, and he yet fails to produce good Grapes, then we are driven to the conclusion that there has been an error in management somewhere; but, on the other hand, if the houses are radically bad, dark, heavy, tumbledown structures, or if they are situated in a swamp, or in a district where the soil is comparatively sterile, and for agricultural purposes dear at 10s. an acre (and good soil cannot be purchased), then superior Grapes cannot be expected. Again, if a gardener unfortunately inherits from a predecessor Vines in a thoroughly bad state, carrying poor crops of fruit and large crops of mealy bug, he is to be pitied, and certainly ought not to be blamed if he fails to render the Vines clean, healthy, and productive in a year or two.

Nine good gardeners out of ten would in a case of the kind just noted advise that the old Vines be removed and also the old borders, that the house be thoroughly cleansed and painted, that new borders be made and young Vines be planted. That would be attacking the evil at its root and laying a firm foundation for future success. But owners of Vines do not always see things in the same light that gardeners do. Perhaps it is within the recollection of the former that new borders have been made at considerable expense and young Vines planted, and yet the present

unsatisfactory results have followed. It is then not surprising if an employer hesitates in accepting the advice of a new gardener until he has had some proof of his abilities. The gardener under such circumstances may possibly feel a trifle uncomfortable; but if he reflects a little he will perhaps admit that his employer is only exercising reasonable caution and ordinary prudence.

Confidence is only gained by proving that it is deserved. It is often a hard struggle to win it, but with ability, perseverance, and industry it is to be won. One of the best modes that a gardener can adopt to "get his own way" is by proving himself willing to make the best of the plans of his employer. It is always true policy to make those plans a success if possible. Try them fairly and honestly. If they succeed fairly well mutual pleasantness will result and confidence will be more than half won; if they fail most employers, conscious that the utmost has been done to achieve success, will readily acquiesce in a change of plan, and the gardener, then of proved worth in the employer's estimation, will have pretty much his own way.

A quarter of a century ago I succeeded a gardener who had spent five miserable years in fighting an employer over some old Vines. The gardener was stubbornly determined to have the old Vines out and have young Vines planted; the employer was equally determined that if possible the old favourite Vines should be renovated. It is easy to determine who would lose in a contest of that kind. Finding what above all things was coveted—namely, presentable Grapes on the old veterans, I determined to try and produce them. I entered on my duties in August, and the first work I did was to attack the Vine border. The first step to the renovation of the Vines was a rude one, but it answered. The rafters were 4 feet apart, a Vine being planted under each rafter. I simply dug trenches across the border of one house exactly between the Vines, these trenches being 2 feet wide and as deep as the border. Most of the roots found were cut off smoothly, as I felt certain there would be sufficient in the 2-feet-wide ridges remaining to keep the Vines alive until new roots were produced. The trenches were filled with manure, vegetable soil, decayed leaves, burnt refuse, and a little loam to check undue fermentation. The mass heated slightly. On examining the cut ends of the roots a month afterwards I found them callused, and in October there was a fringe of white fleshy rootlets just entering the manure. In the meantime the Vines were syringed regularly to keep the foliage fresh and no laterals were cut off, and thus root-action was encouraged. The foliage was retained longer than usual, which was a good sign. In November pruning was done. The spurs were not more than 6 inches apart. A selection of the best was made, and the others, more than half, were sawn off nearly but not quite close to the rods, and smoothly pared with the knife. The young wood on the spurs remaining was not pruned closely, but some of the young growths were tied up to the rods and shortened at the best buds, the eyes at the base being almost invisible, and obviously of little use. In the spring the old Vines broke better than they had done for years past and some very fair bunches were produced: young growths also

issued close to the main rods, as I rather anticipated they would when cutting off the old spurs. These were encouraged, and every shoot was removed that was likely to interfere with them. In the autumn were cut several acceptable dishes of Grapes, good wood was provided for another year, and an opportunity afforded for removing some of the other ugly spurs. The year following, knowing there were plenty of roots in the manured trenches, a width of 4 feet was dug out from the entire front of the border, chopping the roots off as before and filling in with rich compost the same as in the trenches. The "crust" was taken off the ridges at the same time, just baring the roots, which were also covered with fresh compost. After that the Vines grew vigorously and produced serviceable crops of fruit.

The border of the second house was entirely removed in the autumn (November), the best roots being carefully preserved and the others shortened, and the Vines were planted in a new border of good turfy loam with slight manurial additions. Pruning was done as above described. The Vines improved, but not so quickly as the others, for instead of new roots being produced in the autumn they were not produced until the following June, when the Vines were in leaf. The Vines in the third house were lifted, and the border was renewed in March just as the buds were swelling. Great care was taken to prevent the roots being dried during the lifting process, and the Vines in both houses were treated the same in every respect. They were grown as coolly as possible, so that the stored-up sap in the rods was not exhausted before fresh roots were produced to continue the supply. The spring-lifted Vines started better and grew more freely than those lifted in November, but eventually both houses produced good crops.

When Grapes became plentiful it was suggested that one of the houses could be planted with young Vines without any material check being experienced in the supply of fruit. The response was very different from what it would have been three years previously. By doing what my employer wished then I had full liberty, readily granted, to do as I liked now. My plan was this:—A brick wall was built inside the house parallel with the front wall, and 2½ feet from it (the hot-water pipes not permitting a wider space); Vines were raised from eyes, and in June were turned out of the pots and planted in this narrow inside border, the growing canes being trained between the old Vines, which had their laterals pinched more closely than usual to admit light to the youngsters. These grew freely and produced good canes the same season. The following year the old Vines were denuded of their spurs at the lower half of the rods, the top portion being cropped heavily, and afterwards the old Vines were taken out entirely, the outside border removed, arches made in the front wall, and a wider feeding ground given the young Vines that until then had been confined to the narrow border inside. The whole of the range was eventually treated in the same manner, and both employer and gardener were well satisfied with the result.

I have lifted many Vines since then and renovated other houses, and have arrived at the conclusion that the end of August or the beginning of September is the best time for root-pruning old Vines and enriching old Vine borders where the Vines are only wanted to be "kept on their legs" and improved for a year or two to maintain the supply until young rods come into bearing; and that the best mode of establishing young Vines is, when the heating arrangements allow, to form narrow inside borders and plant at the time and in the manner above described.

If it is desired to renovate Vines with a view to rely on them, and not to plant young canes, and if at the same time there must be no blank in the fruit supply, I still advocate the renewal of the border in summer or very early autumn before the leaves fall. But the work must be done with great care. There must be shading both of the Vines and roots during the process of removal, and the syringe must be freely employed to both; and when a crop must be had the following year one or two main roots of each Vine should be left intact, placing fresh soil round them, but not severing them until the following year, when new roots will have formed. The old roots (previously marked with sticks inserted in the border) can then be severed where desired without the Vines receiving any check to their growth. Where it is not of importance that Grapes be had the following season the whole of the roots may be raised and be shortened and pruned as desired, and the border be renewed as soon as possible after the fruit has been cut, or any time from the present date to the beginning of October.

In renovating old Vines it is always advisable to train up young growths, affording them all the light possible, and thus to prepare for the entire removal of the old rods with their scraggy and unsightly spurs.—A NORTHERN GARDENER.

### SUBTROPICALS.

Few things in my opinion add more to the beauty of a garden than a judicious use of large-growing plants, such as are usually called subtropicals. Most of them are easily grown and give little trouble after they are once out, although, as a rule, they have voracious appetites, and will swallow any amount of the good things which are the venison and cream of the vegetable world. In fact, the rapid growth which they make must be supplied with liberal doses of liquid manure if the subtropical vegetation is to look healthy and luxuriant, and unless it does so look there is no beauty in it.

When I first came here I found the margin of the lawn dotted with little round beds, each of which contained one standard Rose. Now the French say, "*Chacun à son goût*," and my own *goût* in this case is not to like standard Roses dotted about in little beds on the margin of a lawn. They look to me absurdly stiff and formal. I do not know what enthusiastic Rose-lovers would say to me, but I directed the factotum to clear them all away except two. They were really so beautiful that I could not make up my mind to destroy them, and there they stand still, though more than nine years have passed away. We turfed down all those little beds which were by the side of the drive, but the others I allowed to remain, intending to fill them with specimen plants of the subtropical kind.

About the same time a clump of three Fir trees standing on slightly raised ground had to be taken down. The wind kindly took one, and then the others were obliged to follow. They were lanky sickly-looking trees, and I was glad to get rid of them though I missed them for a while. I think they were to the Fir tree world just what that poor creature must have been among his fellow men, to whom in the churchyard just over my wall his friends have placed this sad memorial—

\* Pain was my portion,  
Physick was my food;  
Groans were my devotion,  
Drugs did me no good."

Alas for the doctors! However, my trees were destroyed and made excellent firewood, and in their place I made a large bed for subtropicals. Knowing their fondness for high living I had a cartload of the richest material from the dung yard mixed with leaf mould and the old soil of the lawn before I put anything in. Then I placed a good clump of Pampas Grass in the centre, and surrounded it with *Tritoma Uvaria*. The following spring this bed was filled with Castor-oil Plants, Cannas, *Dracena terminalis*, Tobacco, and *Acacia lophantha*. The bed was a great success the first year. The various colours and forms of the leaves harmonised well together, and the *Tritomas* sent up fine flaming red hot poker round the Pampas. But all my pride in that bed has been taken out of me since, for I have seen Pampas and *Tritomas* together on a large scale in a beautiful valley in the New Forest which has made my little effort look very small indeed.

Not far from Dibden on the Southampton Water may be seen growing in wild luxuriance in a narrow valley between two rounded hills glorious clumps of Pampas and *Tritoma Uvaria*, and growing so magnificently that the sight is one never to be forgotten. That is landscape gardening indeed, and really well done. The hill on one side is clothed with specimens of various Pines, on the other all is wild with rock and Heather and Gorse.

But to return to my subtropical bed. After a year or two the Pampas had to be left in almost sole possession of the whole, surrounded only by a few Cannas and *Verbena venosa* and other smaller plants. The fiery pokers, too, can now scarcely find their way out through the drooping rough-edged leaves of the monopolising Pampas. However, it is beautiful in itself, and most useful in the waving silvery feather heads which it produces. With them both house and church are more or less decorated in the autumn. By the way, it is important in gathering Pampas flowers for decoration to take them before the feathery part has come out of the sheath in which it is folded at first. If this is not done it is probable that the flowers will be dull and brown instead of being, as they ought to be, bright and silvery.

With regard to the other beds, I have found them a very beautiful adjunct to the flower garden. They have been filled



with various specimen plants alternated and changed as much as possible from year to year. In the shade under some magnificent Plane trees I have always found *Dracena terminalis* do well. It preserves its bright colour to late autumn, and generally makes fair growth during the hottest time of the year: it does not bear much sunburn. The Giant Hemp is a beautiful plant, so tall and graceful and light; it has stood all the storms of this stormy season, and seems none the worse after all, though while the wind is blowing it about it looks as if it must be destroyed. Probably the toughness of its fibre enables it to weather the storm. Tobacco is too ragged to place by itself even in groups of three or four plants; it must be associated with other large-growing plants. The Bamboo is striking from its peculiar style of growth, and is one of the most excellent plants for a specimen; it is hardy, too, for last winter did it comparatively little injury. The various species of *Ricinus* are always chief aids to fall back upon, their immense leaves and glaucous stems having a truly sub-tropical appearance. Last year I had the *R. Gibsoni*; its dark leaves were a lovely contrast to the green of the lawn and other plants near it. It ripened its seeds well. This year I have *R. philippinensis*, and I am much pleased with its huge leaves and the oily green of their long fingers. *Caladium esculentum* is a great favourite, but it will not do alone. The enormous leaves are a great source of wonder to the good people of the village when they come to see my garden. The plants remain in their pots all the year. First they decorate the vinery, and then when the weather is warm enough they are placed in a group by the bow window of the dining-room, where they seem very happy and look very beautiful. In the late extraordinary gales the giant leaves nodded, and wriggled, and twisted about as if they did not much like it, but they are not much the worse after all.

The various forms of *Cannas* are most useful for my little beds. Some of them flower, and some with larger leaves have never shown any disposition to flower yet. I treat them much like Dahlias, storing up the roots in a cellar during the winter, and giving them a push in the early vinery in spring. There is something cool and refreshing about the soft green leaves of the *Canna*, as they gracefully unroll themselves to the summer heat. An Indian friend once exclaimed, "What! that nasty weed in your garden! I am sick of seeing it everywhere." "Well," I said, "I can hardly believe that I should ever get tired of seeing such a beautiful plant, even if it were a weed and a common one." As it is, I think the *Canna* comes in for more than its share of praise from visitors to the garden. I must not omit to mention the *Banana* (*Musa ensata*). I grew this from seed, and in two years it was a stately plant; it lived in the greenhouse during the winter, and was carried out in a tub which was sunk in the ground in June. By the side of it I placed a *Seaforthia elegans*, and I must say those two plants attracted more attention than anything else I possess. The leaves of the *Banana* were often 8 feet long, and I have been obliged to give up putting the plants out. The *Banana* grew too large for the factotum and a helper to carry in and out of the house. The *Seaforthia* showed strong signs of disapproving of the treatment. But for two seasons they were really lovely side by side in a small part of the garden which is very sheltered. The *Banana* is now in a lofty conservatory, but it threatens soon to want a house like the Palm house at Kew.—A GLOUCESTERSHIRE PARSON.

#### DUPLICATE ROSES.

AFTER drawing the fire of two such great guns in the matter of Fisher Holmes and Duc de Wellington, my more prudent plan will be to retract. I quite see the differences so courteously pointed out; still I think they are almost too similar for exhibiting, and I border on the conclusion of the sorely perplexed African, "Pompey and Caesar berry much alike, especially Pompey." Fisher Holmes might often do for both. In respect of others that "WYLD SAVAGE" names, and especially of Mr. G. Paul's printed list, there can be no such hesitation; and I venture to think some reform of nomenclature one of the things that the National Rose Society may presently very profitably take up. If a list were given of names which, as duplicates, would not be recognised at any of their shows, and the presence of which would disqualify, this would no doubt be adopted by all affiliated societies, and a check would be given. The remarks of "D., Deal," on this subject (I suppose the judge of largest experience that we have) in a late number of the Journal are well worthy of notice; it ought to be an absolute rule at every show that every Rose is named (though

I would give facilities for finding out a lost name before the judging commenced), and then duplicates ought to be actually looked for, as is indeed a usual practice with judges.

Another point is the checking of old friends reappearing with a new name. It is a hardship to have to give a higher price for Marguerite Brassyac and to find out, as we have been shown, that she is only Charles Lefebvre. The Beauty of Glasenwood business was a very flagrant instance of this kind. Fortune's Yellow ought never to have allowed his name to be wrested from him as it has been. As regards the Cheshunt Roses, there is certainly a strong family resemblance in a certain strain. But it must be remembered this is rather a doubtful time of year for comparing; some Roses now will come so little like themselves that they are hardly to be recognised, and the same going off may make them run into others.—A. C.

#### FORCING STRAWBERRIES IN POTS.

FROM the remarks of your correspondent Mr. H. C. Ogle (page 180) I can only come to one of two conclusions—either that he is attempting to explain a system set forth by him some weeks ago, or that he is endeavouring to pull to pieces the article which appeared from my pen on the above subject. As Mr. Ogle's remarks on comparing his two articles seem very inconsistent I would like to ask him, What system of culture he really does pursue? It is very easy to see that he is unknowingly setting forth two different systems. In his first (page 464), after the final potting into the fruiting pots he says, "I again place them in cool frames, where they remain until required for forcing;" but in his second, "In winter the plants are placed in shallow cool frames on ashes with tar felted on framework in place of lights." In the one case, then, the plants are placed after the final potting in cool frames, in the other they are only placed in them for protection during winter.

Again, we find Mr. Ogle placing the pots in saucers of water in order to save watering, as he explains in his first article; and in a letter six weeks later they are placed in saucers, because "the Strawberry is of strong growth and subject to red spider." Having some doubt about the accuracy of his first statement he further says, "It is for the purpose of preventing drip," which appears to be his principal reason for the use of saucers. I wish to know if Strawberry pots standing in water will keep red spider in check. My experience is that Strawberries too frequently become a prey to red spider, either through neglect or through the plants being starved at some time. If the plants are grown rapidly under favourable conditions without check there is little fear of that insect troubling them; but should spider exist on the plants when stored in the winter they invariably are a source of annoyance in the spring, and I believe no saucers of water will eradicate them.

While your correspondent admits he would be glad to hear of any improvement in the way of culture, he appears slow in embracing the system already advanced in the Journal of layering runners into the fruiting pots. This system has a decided advantage over the one recommended at page 464 of the last, and again at page 130 of the present volume. I will just examine the two modes. First the runners are taken off, rooted in a close frame, and then finally potted. This plan not only draws the young plants up weakly, but in adopting it great risk is run of damaging the crowns in the hurry of potting them by those charged to carry out the operation. As to our method, I will ask Mr. Ogle if the work of potting the plants from small pots into fruiting pots does not take twice as long as filling the fruiting pots in the first place and layering the runners? Further, must not the young plants make greater progress when assisted by the parent plant than when severed and subjected to unnatural treatment? Moreover, when layered into fruiting pots the plants receive no check afterwards, which they are bound to do to a greater or less extent by carrying out the operation of potting from smaller into larger pots. Supposing from two thousand to four thousand plants are forced, there is that number of small pots to be washed in which to place the runners, and then they have to be changed to larger pots. None of this is necessary with the other system. Besides the large amount of labour saved there is no comparison between the plants grown under one system and the other. In the one the plants are weak and puny, as a visit to our garden will abundantly prove, while in the other they are robust and full of vigour.

It would be well for Mr. Ogle to carefully peruse my remarks

on page 1, for then perhaps he will clearly see that there is no allusion to the stacking system in winter. Strawberries need no protection in winter when plunged outside in leaf soil or coal-sashes, except in the case of plants required for very early forcing. Taking for granted that the system of layering in fruiting pots is thirty years old, and that the one advanced by Mr. Ogle is of more recent date, I still say without hesitation that the newer mode of culture is a step in the wrong direction.—WM. BARDNEY, *Norris Green*.

### WINTER SPINACH.

THIS is one of the most useful and perhaps one of the most disappointing crops in the garden. The seed usually germinates freely, and the plants grow well enough for a time, and then one by one canker and die until the bed is spoiled. One reason why the plants "go off" is that the soil is too rich, producing a very succulent growth, which speedily succumbs to the influences of adverse weather. I have often found it advantageous to sow on firm ground—that is, ground that has not been dug after a preceding crop, say of winter Onions. In low-lying and wet positions it is worth while forming the ground into a series of ridges about 18 inches apart, sowing a row on the top of each ridge; but the best place of all for winter Spinach is an ordinary field. In such an exposed position I have never found it fail, which suggests that when grown in gardens, as in nearly all cases it must be, moderately fertile soil and an open site are essentials to success. It is very important also that the plants be thinned out freely, not after they become crowded, but before they touch each other; they then assume a sturdy hardy character, enabling them to pass the winter with comparative safety. The winter or prickly-seeded Spinach is more hardy than the round-seeded or what is termed summer Spinach, at least so say all the books, and catalogue writers who copy from books; but I for one dissent from such teaching. I have sown both varieties side by side for nearly twenty times during as many consecutive Autumns, and not in one instance has the "winter" proved more hardy than the "summer" variety. More often the reverse has been the case, and I would quite as soon rely on the round-seeded variety sown now for yielding a supply of leaves early next spring as the prickly-seeded sort. I think Mr. William Taylor has written to the same effect; but although he flatters me by describing my writings as provokingly like his own, I have certainly not copied his practice in growing Spinach, for I proved what I have said as to the relative hardiness of the two varieties long before he enriched the pages of the Journal with the records of his experience, and long also, I may say, before I was seized with a scribbling fit, which occasionally impels me to narrate my own views and practice. I perceive, however, that at last I have placed myself in opposition to Mr. Taylor. As calmly as possible I await the coming impeachment.—A NORTHERN GARDENER.

### MAIDENHEAD HORTICULTURAL SOCIETY.

AUGUST 14TH.

THE second annual Exhibition of this Society was held on the above date, the day being all that could be desired. A very good show of plants, flowers, and fruit was staged; and worthy of special notice was a collection of stove plants from the Duke of Westminster's gardens, Olfeden. In this collection *Oretons* and *Ferns* were very fine, one *Adiantum farleyense* being 3 feet through. Next came Mr. C. Turner's collection of *Liliums*, *Roses*, *Carnations*, and *Picotees*. It is well known where Mr. Turner exhibits there is something good to be seen. The *Roses*, *Carnations*, and *Picotees* were beautiful. Six boxes of *Roses* were staged containing seventy-two blooms each, and all were excellent both for size and quality. These, the *Carnations* and *Picotees*, were the chief attraction amongst the flowers.

The following were the awards in the principal classes: For six variegated or handsome-foliated plants Mr. G. Elliott, gardener to J. Ribbert, Esq., was first. For six stove *Ferns* Mr. J. Tomlin, gardener to Miss Patterson, was first. For one specimen plant Mr. J. Hibbert again carried off the honours. For a group of plants to occupy a space of 12 feet by 10, Mr. Maher, gardener to C. Allhusen, Esq., Stoke Court, was first; J. Hibbert, Esq., second; and Mr. Elliott, florist, third. In the class for *Fuchsias* first honours went to Mr. H. E. Gribble, gardener to H. Palmer, Esq. Eight classes were provided for cut flowers, and most were well contested.

FRUIT.—In the class for six dishes of distinct kinds C. Allhusen, Esq., was first; second Mr. A. G. Bridgman, gardener to J. S. Cocks, Esq. In the class for Black Hamburg Grapes first honours were obtained by Miss Patterson; second, J. W. Burrows, Esq.; third, Mr. W. Mowbray, gardener to the Earl of Leven and Mel-

ville. In the class for Muscat of Alexandria Grapes the Earl of Leven was first, Miss Patterson second, Mr. G. Reye third. In the class for Peaches J. S. Cocks, Esq., was first; Miss Patterson second; C. Allhusen, Esq., third. Nectarines.—E. H. Palmer, Esq., first; C. Allhusen, Esq., second; Miss Patterson third. Apples were shown, but inferior both in size and quality. Melons also were very inferior. With the exceptions named the fruit generally was very good.

Vegetables were well represented, and taking the season into consideration they were good, particularly in the collections for nine dishes.

A division was provided for amateurs only, and some very good plants, cut flowers, fruits, and vegetables were shown. The cottagers' classes were well filled with good vegetables, and substantial prizes were offered to the cottagers for their products. Special prizes were offered by Mr. Broughton, Mr. Elliott, and Mr. Fernie of Maidenhead, also by Messrs. Sutton & Sons, Reading, to cottagers for vegetables; these brought strong competition, and all classes were well contested. Mr. Standish staged a collection of plants not for competition. Most conspicuous and good were the American Tuberoses.

On the whole the Show was a very good one and we think must be a decided success, as the large hall was crowded with people from the opening to the close of the Exhibition. Great credit is due to the Committee under whose management so much has been achieved.

### A FLOWERY LAND.

DURING a season like the present, when the general aspect of field and garden is comparatively colourless by an overwhelming preponderance of foliage and a corresponding paucity of flowers, the above terms applied to the majority of gardens would be a misnomer; but it is certainly not so when employed in reference to a bright spot on the Essex coast—namely, the seed farm of Messrs. James Carter & Co. at St. Oysth. The firm in question is far too enterprising to permit its works, possessions, and resources to remain in obscurity; but no one who has seen the farm under notice during the present month can accuse the proprietors of over-estimating its importance as exemplifying the magnitude of the flower seed industry, nor of unduly extolling the striking beauty it presents when seen under the advantages of a sunny day. The gently undulated ground far almost as the eye can reach is one grand fugal panorama—nearly every colour being represented in clear bold masses, varying from a few rods to an acre or more each. In one field the flowers are grown in comparatively small squares of a few poles in extent, the colours being arranged with a view to effect, the whole resembling a piece of mosaic work of considerable magnitude and great brilliancy. In another they are grown in larger masses, clearly defined stripes of colour from 5 to 10 yards wide and several chains long. In another the groups are more irregular—blue, white, yellow, crimson, pink, buff, and indeed almost every conceivable colour being represented, and all full, fresh, and level to the extent of quite sixty acres, and forming what is a perfectly justifiable designation—"A Flowery Land."

Let us look a little more closely at the several parts composing this rich and varied picture. No one who has not seen, for instance, an acre of the orange *Eschscholtzia* can imagine its brightness, nor the rich fiery glow of a mass of the orange-scarlet variety *Mandarin*, nor the density of colour of the double yellow. Besides these there are in smaller masses a distinct rose-coloured variety, and even a choice patch of a semi-double white form of this popular annual. In fine contrast are some acres of the charming sky-blue *Nemophila insignis*, and a considerable extent of its variety *marginata*, the petals being margined with white. Still deeper in colour are the rich breadths of such *Lobelias* as the true species and *Cobalt Blue*, and the paler yet still attractive *Paxtoni*. Of more dazzling hues are the dwarf *Trepasiums*; the intense velvety maroon of *King Theodore*, the distinct Ruby King, the soft buff of *Crystal Palace Gem*, the shining yellow of *Golden Tom Thumb*, and the glowing scarlet of *King of Tom Thumbs* with its dark bluish-green foliage. This is the best of all the scarlet varieties grown en masse, but a variety selected from it is decidedly richer in colour, which as yet is only seen in a very small quantity. Some new varieties which have been selected and "fixed" by Messrs. Carter's foreman command attention by their novel colours. Spotted Queen, golden yellow spotted with scarlet crimson, is totally distinct from Spotted King, which is blotched with chocolate; The Prince is pale primrose with clear chocolate spots, very distinct; Chameleon is buff spotted and margined with rosy crimson; and The

Bride is a soft pleasing yellow faintly spotted and flaked with purplish crimson. These novelties are very attractive and quite dissimilar from all others of this useful genus of free-growing yet dwarf and effective annuals.

Less glowing than the *Tropaeolums*, but not less attractive, are the extremely chaste and very pleasing masses of *Rhodanthes maculata*, *Manglesii alba*, &c.; also an effective double-flowered variety. The *Glarkias* in large squares present an extremely cheerful appearance, especially *C. integrifolia* limbata, every petal of which is clearly banded with white, the plants growing about a foot high, and the entire bed as level as if all the plants had been the produce of one pod of seed. A newer variety with a darker centre has been selected, which is regarded as an acquisition. The double white variety is a mass of purity, and tells well amongst the deeper colours. Not many squares have a more gay and beautiful appearance than those devoted to dwarf *Larkspurs*—the Stock-flowered, Rocket, and *Hyacinth-flowered*, each in upwards of a dozen distinct colours, the plants being as regular in size as if they had been cast in a mould. Of a richer order of beauty is a gorgeous breadth of *Godetia Lady Albemarle*. This fine variety is somewhat sportive in its character, and it can only be kept true by rigid selection. Every plant having the slightest tendency to overtop its neighbours must be removed before flowering, or the seed will not be reliable. In this large bed of many thousand plants not one can be seen differing from the rest either in habit of growth or colour of flowers, but the whole presents a level magnificent glow of lively crimson. Equal to that variety in colour is *G. Whitneyi flammula*. The plant is apparently of rather more sturdy habit than the foregoing and flowers somewhat later, and the large bed of it is very grand. *G. Whitneyi* is very fine, and there are other colours of this gay genus, including a pure white form, the various masses being singularly striking. Another rich and distinctly beautiful quarter is *Viscaria cardinalis*. This variety, which is by far the finest of them all, originated at St. Osyth some years ago, and special care is taken to keep it pure, the seed for stock being saved each year from the most brilliant colours (shining crimson scarlet), or the variety deteriorates. When seen true as it is "at home" it is one of the most beautiful annuals in cultivation.

Of annuals of larger growth grown by the acre are Sweet Peas in separate colours. The harvest of these, it is feared, will not be a good one, the plants being scarcely in full flower, and the seed can hardly be expected to ripen in the usual manner. In appearance the masses are very beautiful, and the perfume is wafted by the breeze to a long distance, and as mingled with that from an acre or two of Sweet Alyssum and patches of Sweet Sultan in various colours the odour is powerful and peculiarly refreshing. Not sweet but remarkably striking are the squares of *Chrysanthemums*—the double white variety *Dummetti*, full and pure; and the double golden with large Aster-like flowers. *Antirrhinums* also command attention as grown in separate colours and in mixture, the crimson and white beds, "self beds," being particularly noticeable. The bed of fine dark *Emperor Larkspur* is very rich.

Of annuals of dwarf habit which command attention by the rich carpet-like surface produced by them are such Campanulas as *Lorei* and the bright *Venus's Looking-glass*; and for panels of pink nothing can surpass the pretty *Saponaria calabrica* and the fine spring-bedder *Silene pendula compacta*. The white *Saponaria pumila alba* is also very charming; and equally so are the *Leptosiphons*—*densiflorus*, which has grown taller than usual this year; *roseus*, dwarf and extremely pretty; and *luteus*, sparkling with its thousands of tiny golden flowers. Candytufts in various colours are largely grown, but the quarters have been somewhat injured by the wet. *Collinsias* produce a charming effect, and especially so does *Lupinus nanus*, which is extremely rich when grown by the rod. *Nolana paradoxa*, the *Sphenogynes*, *Kaulfussias*, *Bartonnias*, very dwarf and very double French *Marigolds*, and many other flowers which share in the filling-in of this great floral picture. Many annuals have necessarily been omitted mention, but one tiny gem must not be forgotten—namely, *Nycteriza selaginoides*, which is highly worthy of cultivation both in pots and small beds. A splendid bed of Sweet Williams, too, demands notice. The varieties are of great excellence; the flowers large, flat, and circular, and the colours defined with great clearness—a fine selection. Pansies, too, are extremely gay, at least the fancy varieties are, while the one named *Beauty of St. Osyth* is about as black as a chimney-sweep's hat. In fine contrast is a bed near it of the dwarf, floriferous

and extremely brilliant *Mimulus cupreus*—a splendid plant for pots and moist but not overshadowed borders. The appearance presented by the large masses of the flowers named and of many others that must be passed in silence is at once splendid and imposing. Every variety is selected with great care, and out of the countless thousands of plants grown scarcely a "rogue" can be seen.

Only a few acres of the St. Osyth seed farm are devoted to vegetables (which are grown on other farms), and incomparably the most striking of all the vegetables now to be seen is the new dwarf Pea *Stratagem*. Of the rows of this Pea one or two supported by short sticks, and the others growing in a square without any such assistance, it is impossible to speak too highly. The haulm is nearly 2 feet in height and very strong; and grand pods are produced from the very ground to the tips; so low down indeed are they and so fine that their points rest on the soil. The pods are as large as those of *Telegraph* grown in the same field, and are equally full, which is saying a great deal, and the Peas are also of the first size, sweet and juicy. On trenched and well-enriched ground this new dwarf Pea cannot fail to give great satisfaction, while if grown in manured trenches and the haulm supported by a few sticks grand rows must follow. On thin, dry, and comparatively poor soil dwarf Peas are often disappointing. They require soil in "good heart," and are then valuable both for home consumption and market purposes. This is the finest of all dwarf Peas, and the nearest to it is another variety of the same character named *Strength*. This may be a little dwarfer than the other and the pods a trifle broader and a shade deeper in colour, but generally there is a similarity between the two; still, as they were not growing in the same quarter they could not be properly compared.

We now come to *Telegraph* and *Telephone*. These are growing side by side, and in appearance are very nearly identical. The latter was simply selected from the former, the wrinkled seeds being separated from the round, and after being tried at Chiswick the wrinkled form was awarded a first-class certificate. It is decidedly premature to judge of the relative merits of the two Peas, or to indulge in any dogmatic assertions relative to either of them, until it has been proved that *Telephone* does not produce wrinkled seeds. If it yields both smooth and wrinkled seeds the same as *Telegraph* the question is settled as to their identity. Wrinkled Peas are generally of better quality than round, and quality is hardly an unimportant point. If it were, and if the fact of a Pea being wrinkled were not sufficient to constitute it a variety, we should have no Champion of England Pea now. The history of this good old standard variety is known to many, but has been forgotten perhaps by some. An early-blooming plant of Knight's Dwarf Marrow was selected for seed. One of the pods produced by this plant contained both smooth and wrinkled Peas. These were sown; and the relative characters of the seed being maintained, the round variety became *Fairbeard's Surprise*, and the wrinkled one *Champion of England*. Suppose the same distinctive points should be "fixed" in reference to the two Peas *Telegraph* and *Telephone*, will not that be sufficient to constitute them separate varieties? Judgment on Peas by merely seeing them growing can be of little or no weight; therefore until the varieties have been fairly tested in a cooked state, and until it is seen in what form the seed ripens, it will only be prudent and fair to withhold the expression of a definite opinion in regard to their identity.

On the same farm some selected stocks of Wheat, Carter's Fill-measure, and a horned variety, are remarkable for their fine heads, in this respect greatly excelling the ordinary varieties of Wheat in general cultivation. The entire grounds are, considering the season, remarkably clean. The soil being light and well drained has enabled weeds being destroyed more easily than has been the case on the majority of soils, and this advantage has certainly been turned to account, for scarcely any weeds are visible in this excellently managed and highly attractive farm, which is situated about fourteen miles from the Manningtree station of the Great Eastern Railway, and about three miles from the sea.—VISITOR.

[Since our correspondent's notes relative to *Telegraph* and *Telephone* Peas were written the varieties have been "fairly tested in a cooked state," by the Fruit Committee of the Royal Horticultural Society, and have been found distinct.—EDS.]

GLOIRE DE NANCY BEGONIA.—I send you a flower of this variety, but it is not so fine as one now on the plant, but is a

fair average size. I consider this one of the most useful varieties we have. The plant has been loaded with blossoms for some months and will be for some months to come.—WILLIAM POTTEN, *Sissinghurst*.

[The flower exceeds 2 inches in diameter, is perfectly double, and very fine.—EDS.]

#### PARAFFIN AS AN INSECT KILLER.

FURTHER experiments on a large scale have fully convinced me that this is the best and safest antidote for red spider and scale with which I am acquainted. Thrips and fly are not so readily destroyed by it, but these it is well known are easily destroyed indoors by fumigation. The quantity of paraffin which I find safe as well as effectual is  $1\frac{1}{2}$  oz. in weight to a gallon of water, and this if used unsparingly in the way which has been so often described in this Journal—viz., putting a syringeful into the pot and on to the plant alternately, will with two or three doses cure the worst cases of scale or red spider in existence. I have no doubt from what I have heard that it is equally effectual for mealy bug, and I would recommend those who have this troublesome pest even in their bunches of Grapes to try it; for although happily I have no chance to prove its efficacy in this respect, I have proved its efficacy as well as its harmlessness on other very tender plants, some of which I will name before I conclude these notes.

No doubt we shall have, as before, many of your readers rushing to the rescue and telling us in piteous tones how they have had their plants killed outright by using paraffin, and seriously warning us that even the odour is injurious to plant life. I give these good friends all credit for honesty of purpose and for faithfully recording their convictions; but we always find when examining their details that they have not carried out the instructions given, or they attribute their failure to the wrong cause.

We read of trees being killed by painting in winter with undiluted paraffin, or of plants being seriously injured by dipping in a very strong mixture of it. Results cannot be otherwise. The abuse of a thing does not prove its worthlessness, and we know it is sometimes possible to have too much even of a good thing. But, on the other hand, if the recommendations of anyone of your responsible contributors are faithfully carried out and failure then follows, it is very important that the operator should give all details with the strictest accuracy, so that any error in the instructions may be detected and the failure ascribed to the right cause.

A very necessary precaution which I omitted to mention in a previous paper is to prevent the sun touching any plant which has been syringed with paraffin before it gets perfectly dry. This will sometimes take a whole day, or even two days, for the oily substance sticks to some leaves a long time, and as far as my experience goes it cannot easily be removed except by evaporation. We have tried to syringe it off with clear water; we have also tried soapy water both hot and cold, and water with soda dissolved in it, but none of these are very effectual so long as they are used at a strength which is safe.

We have tried several plans to make the paraffin mix with the water, such as making the water hot, using soda or soft soap with it or both, but it is always the same—the oil comes to the top, although there is certainly something in the paraffin which always mixes with the water, for it changes the colour of it. I have used it at the strength above named for Peach trees immediately the flowers were set, and again on other trees after the second swelling had commenced. I have used it for yearling pot Vines while the growth was very tender, and for Stephanotis with hundreds of fully expanded flowers on it. Once only a few of the Peach leaves had holes burned in them as large as a small pea, and this was owing to the sun reaching them before they were dry. In no case where the precautions I have named were taken was there the least injury to leaf, fruit, or flower, while the cure was perfect.—WILLIAM TAYLOR.

#### CLETHRA ARBOREA.

I WAS much pleased to see your remarks and illustration of this plant at page 130, as on account of its fine flowers it is well worth the attention of your numerous readers. The description of it is quite correct, but you have under-estimated its height, "8 or 9 feet." There is a large plant of it growing

in a box here over 20 feet in height, about half that through, and of a fine natural conical shape. When in bloom this plant is very attractive. I believe it would stand out of doors very well in ordinary winters, as although we place our plants of it in the Orange house during the winter, they were frequently subjected to 10° of frost in this structure last winter without the slightest injury.—J. MUIR.

#### ABOUT LIVERPOOL.—No. 1.

FROM the report of the Show of the Liverpool Horticultural Association published in a recent issue of the Journal it will be gathered that there are good cultivators in the vicinity of the famous port. The gardeners "about Liverpool" appear to be earnest men, as undoubtedly they are able—over-zealous some of them (I employ the plural advisedly) were on one memorable occasion, and they possess what may be termed a good share of local patriotism, yet notwithstanding they are, as a body, worthy representatives of "the craft," and their works are worthy of record. Before, however, noticing a few private gardens to which a flying visit was paid, it may be well to refer briefly to the public gardens and parks, commencing with the

#### BOTANIC GARDEN.

My visit to this garden and to the principal parks was rendered especially agreeable from the fact that my guide was "no novice," but, on the contrary, was a hale octogenarian—a hearty, active, genuine old gardener aged eighty-six—so active that he walks two miles to church every Sunday, and would walk the same distance any day to see a good crop of Grapes, of which fruit he was once a successful cultivator, as the gold medals in his possession testify. "Old Shaw" is a wonder in his way, and appears to be a general favourite. He demonstrates in a very matter-of-fact manner that the district "about Liverpool" is not unhealthy, and that the vocation of gardening has not proved hurtful to his constitution, for his health is apparently as good, his eyes are as clear, his ears as acute, and his perceptions are as quick as ever. He is further, as he deserves to be—for he has been industrious and prudent—in a very well-to-do position, and nothing pleases him better than to place his carriage at the disposal of a friend, whom he will drive safely during a gardening tour and meet with a ready welcome wherever he calls.

Our first call—passing through Newsham Park—was at the garden under notice. The Curator Mr. Richardson, who is also the chief Superintendent of the parks belonging to the Corporation, was absent. The garden, which is open to the public, has a somewhat venerable appearance. It is a walled enclosure, and contains an extensive collection of hardy herbaceous plants which appear to be properly named and cherished. Of these plants there are several borders by the sides of the principal walks which traverse the enclosure. There are also lawns and flower beds. The design of one of the flower gardens is especially quaint. Between the beds on the lawn are sunken grass paths about 2 feet wide and nearly as much deep. It is a singular arrangement, and the flowers are certainly brought nearer the eye than by the ordinary mode of forming beds on lawns. It is not, however, likely that the plan will be extensively copied, as it is not particularly attractive; but it would be very undesirable to alter it, for it is quite in harmony with the old place and is a distinct and novel feature of the garden. On another lawn the beds are not of the ordinary type, but are very narrow, forming a long, curving, graceful scroll, which when well filled with flowers have an elegant appearance. This year the plants have not grown with their usual freedom owing to the extreme inclemency of the season. There are also other lawns and beds of more modern design, also banks of flowers and a few carpet beds. There appears to be a fair collection of shrubs, but they do not look so fresh as young trees in country gardens.

The principal glass range is extensive, but at the time of my visit the houses were *en deshabille*, as they were being painted inside. Large Palms were tied up, and the plants generally were huddled together as is usual under such circumstances. The Palms are very fine, as also are many of the Tree Ferns, and there appears to be a good collection of plants generally. There are useful ranges of preparing houses—the best part of the garden as I was informed, but for the reason above stated we did not explore them. On meeting Mr. Richardson subsequently he much regretted this; but I was unable to accept his cordial invitation to pay a second visit to the gardens, which are evidently under very efficient management and

appear to be enjoyed by the public, for the visitors appeared numerous and appreciative.

#### PRINCE'S PARK

was our next rendezvous, and we were fortunate in finding Mr. Mason the able manager at home. This park is private property. It is fifty acres in extent, forty of which are enjoyed by the public, the remaining ten acres being more gardenesque in character. This enclosed portion is reserved for the occupants of the contiguous mansions, the ground rents of which defray the cost of keeping the whole fifty acres. The private portion was laid out with great taste by the late Sir Joseph Paxton, and contains many beautiful features. The walks and raised borders of trees and shrubs have been so disposed as to make the enclosure appear much larger than it really is. The water with island and rocks, and the flower gardens in suitable positions, viewed in connection with the fine trees contiguous render this portion of the park very ornamental and agreeable. In the flower gardens, which are not large, the whole of the beds are edged alike, their margins being finished with *Echeveria secunda glauca*, which Mr. Mason finds renders the arrangement more uniform and satisfactory than when various plants are employed for edging beds in small geometrical groups. The ordinary kinds of flower garden plants are employed, but such plants as *Alternantheras* have almost succumbed to the excessive cold and wet weather. A golden carpet and edging plant not often largely employed thrives well in Prince's Park—namely, *Lysimachia nummularia aurea*, which forms a surface of bright gold and is very pleasing. The ornamental grounds were extremely clean and neat, and the pretty and well-managed enclosure was highly enjoyable.

#### SEFTON PARK.

This is not only the most extensive, important, and attractive of all the parks of Liverpool, but is amongst the most ornamental of its kind to be found in the kingdom. It is comparatively new, only having been completed some seven or eight years, but the trees and shrubs have grown remarkably well, and considerable judgment will now need to be exercised in their thinning, so that the most suitable trees can develop satisfactorily and display their forms to advantage.

The park is about three hundred acres in extent, and was laid out with great taste by Messrs. André of Paris, and Hornblower of Liverpool. What strikes the visitor on inspecting this park is the absence of harshness and tedious intricacy of design. The artists took a wide scope of their subject, and executed their work with boldness, smoothness, and freedom. The natural hollows appear to have been deepened and the higher points raised where needed; thus the valleys appear as if Nature had formed them, and the elevations as if they had been there for ages.

In the lower portion of the park is a winding stream about a mile in length, its head being a bold cavernous example of rockwork, from which the water will issue when this part of the work is completed. The stream widens gently as the distance increases from its source until it expands into a small lake, enjoyed in winter by the splendid skating it affords, and in summer for miniature yachting. Here and there islands are formed with jutting rocks at wide intervals, and smooth swelling lawns and mounds of shrubs alternate on its margin, rising and receding in the most natural and picturesque manner. Walks converge at various points, and at those points the scenery is extremely attractive.

The roads are splendid—broad, hard, smooth, well drained, and clean. A very wide drive encircles the park, and others less wide but not less firm dissect it at intervals, forming elegant sweeps for carriages; there is also ample and suitable provision for equestrians.

The trees and shrubs are generally disposed in groups of the same kind rather than dotted in a too conventional manner "all over the place." Flowering trees such as Thorns, and deciduous shrubs such as Weigelas, have been freely planted, and are thriving admirably. The roads, walks, borders, and grass edgings are surprisingly clean considering the season. The Corporation of the town are erecting handsome and convenient lodges for officials and the public, and commodious shelters are formed for visitors in inclement weather—indeed everything appears to be done by the Parks Committee to add to the enjoyment of this splendid place of resort, and they are fortunate in having a manager of taste, ability, and good judgment, for it is abundantly evident that Mr. Herbert possesses these qualifications, or it would not have been pos-

sible for him to have maintained such excellent order as prevails during a season like the present with the staff of men—thirty-five I think—at his disposal.

Flowers are few as yet; but eventually it is expected that provision will be made for more, when some suitable spot will doubtless be found for a flower garden, and thus an additional feature will be provided which the public, as is instanced by the London parks, cannot fail to appreciate, while the pure and true park-like character of the estate will be maintained. Sefton Park is a grand provision for the inhabitants of the town, and contributes in an important manner to their health, recreation, and enjoyment. The other parks of Liverpool—Stanley Shield and Wavertree Parks—although they answer their purpose well and are largely patronised, do not call for special comment.—J. W.

#### STRAWBERRIES FOR PRESERVING—NEWTON'S SEEDLING—GROVE END SCARLET.

MR. PEACH in his interesting notes on Strawberries on page 125 mentions among others Newton's Seedling, which he recommends for preserving. If this is the same as a variety I once grew under the name of Newtown Seedling I can confirm all that Mr. Peach has said in its favour. The variety to which I allude has rather small foliage and small, dark, wiry-looking flower stems, the fruit being medium-sized, conical, dark in colour, and very firm, with a sharp sub-acid flavour. It is one of the most prolific Strawberries in cultivation, is the best traveller that I am acquainted with, and is less injured by wet weather than most other varieties. It makes firm and not over-sweet jam, and is highly worthy of cultivation for preserving purposes, but is not good enough for dessert. It thrives in poorer soil than many other Strawberries, and is altogether a very useful variety. I only know one other Strawberry to surpass it for preserving, and that is the other variety mentioned above.

Grove End Scarlet makes firm jam of a colour that is much coveted. In several large establishments this old variety is the only Strawberry that will be accepted by the cook for preserving. It does not yield half the weight of fruit plant for plant as Newtown (or what is more probably correct), Newton's Seedling does, but is yet fairly prolific. A convenient mode of cultivating this Strawberry is to plant strong runners about 9 inches apart, leaving out every fourth row for an alley, allowing the others to grow in a mass. The Strawberries are then in beds and can be conveniently gathered. When thus cultivated the fruit is kept clean, as the foliage being thick and the Strawberries not heavy they do not rest on the ground, and blackbirds do not find them so readily as when the fruit is exposed. In many gardens the foliage is cut off the beds with a scythe after the fruit has been gathered, and a top-dressing of loam and soot or some other fertiliser is spread on the beds. Some cultivators call that a barbarous practice, but it nevertheless has the merit of answering well as applied to the Strawberry in question. When grown thickly and the foliage is left on the plants light and air are excluded from the crowns, which consequently become weak and the crops are impaired.—AN OLD GROWER.

#### ROSE SOUVENIR DE LA MALMAISON.

M. BELUZE, sen., Rose-grower at Lyons, sowed in the year 1840 a number of seeds which produced the magnificent Rose under consideration. Two years later the raiser was in a position to affirm that something very exceptional had come to light, although at that time he had but one flower, and that one the solitary shoot of the parent plant itself only 13 inches high. This acquisition was brought under the cognisance of the distinguished rosarian M. Plantier, who at once pronounced it to be the best introduction of the times. The flower is distinguished by its rare perfection of form and colouring, yet the first flower was but little over an inch in diameter; but when buds were inserted on strong Bengal stocks the result was natural-sized flowers averaging 3 inches in diameter. That was in the year 1843, the year it was sent out. The most important question, however, was to determine of which variety the seeds which produced this flower were sown. After several delays the Horticultural Society of the Rhone convened several meetings to take this matter into consideration, and ultimately came to the following conclusion: That as seeds of Roses are, except in rare instances, not sown as so many different varieties, it follows that each pan contained the seed of one class



It is therefore not quite certain, though extremely probable, that *Souvenir de la Malmaison* is the offspring of the Bourbon Rose *Madame Desprez*; and that is the opinion of the raiser himself, further strengthened by M. Plantier.

If this assertion requires further proof it will be found in the fact that nearly all the seeds gathered and sown came from *Madame Desprez*, and it will be found upon careful examination that there is a great similarity of habit and foliage between the two varieties. The Bourbon Roses *Jaquard*, *Cendres de Napoleon*, *Etoile du Berger*, raised previous to *Souvenir de la Malmaison*, are all the offspring of *Madame Desprez*. The parent plant of *Souvenir de la Malmaison* still exists at Lyons, where it continues to flourish in spite of being cut down for propagation and growing in a position not at all favourable to it—that is, facing the south. Still growing against the wall where it was first planted out in 1841, this knotty old lady, whose children are to-day distributed throughout the world, still blooms very abundantly, notwithstanding that she had to endure the hardest winters and such severe gales that everything was swept away except one or two eyes at the base.

*Souvenir de la Malmaison*, with its great massive flowers, white slightly diffused with flesh colour, of admirable form, will always retain the exclusive privilege of being a gem of the very first water, esteemed and sought after by the lovers of Roses of all nations, who continue to find in this remarkable variety a full supply of suitable Roses which help to enrich the choicest bouquets at all seasons.—(*Journal des Roses*.)

#### CARTER'S TELEPHONE VERSUS. CULVERWELL'S TELEGRAPH PEAS.

AS the characters of these Peas are at present being brought before the public, and when the Fruit Committee of the Royal Horticultural Society has now confirmed the certificate granted to Telephone last year, let me say I consider this very rightly done, and at the same time I can fully confirm all that "TRUTH" has said on the matter in last week's Journal. In coming to his remarks I was rather curious to know how the difference between these two Peas was to be explained, and the details correspond in every particular with the notes and observations I have been making here during the present season. Most of the Peas here are growing in long rows, one variety following after another in the same row; and in this way we have Telephone and Telegraph growing in upwards of a dozen rows, and in every instance the different characters which "TRUTH" points out are clearly visible. As the season advances I may send you more notes on these and other varieties of Peas, as during this and last season we have grown upwards of thirty sorts, and are now beginning to find out their merits and those which suit us best. Many of them will not be grown here again. I may say Carter's Telephone and Carter's Challenger stand very high in my estimation.—J. MUIR, *Margam Park*.

I HEREWITH enclose samples of Carter's Telephone Pea and Culverwell's Telegraph. I confirm everything that "TRUTH" said on the subject in the last issue of the Journal. The Peas I consider as distinct as any two varieties in cultivation. Please say what you think of the samples I have sent.—THOMAS EADS, *Gardener to John Beake, Esq., The Cedars, Northampton*.

[We have not seen finer pods this year; some of them exceed 5½ inches in length, and every pod we opened contained nine large peas. Telephone is quite as large as Telegraph. The varieties are unquestionably distinct.—EADS.]

#### NOTES AND GLEANINGS.

WE have received the following relative to the CRYSTAL PALACE AUTUMN SHOW:—"In consequence of representations that have been made by several of the leading nurserymen and others, that owing to the badness of the season there is no reasonable hope that even a respectable exhibition of cut flowers can be made this autumn, the Directors have determined to withdraw the proposed Exhibition of cut flowers. The Fruit Show will take place on Thursday, Friday, and Saturday, August 28th, 29th, and 30th, as announced; but the Exhibition of flowers will not take place, and no entries will therefore be received for the proposed Exhibition." We are glad to observe that third prizes are provided in the classes for collections of fruit, and were a portion of the amounts apportioned in the cut flower classes devoted to providing third prizes in

the remaining fruit classes better competition and a larger show would be insured. We regret to see that no prizes are provided for collections of vegetables, which have often been so fine at the Palace, and certainly a great attraction to visitors. Instead of the vegetables a Cucumber Show is attempted, classes being provided for White Spine, Black Spine, and smooth Cucumbers respectively.

—A FINE and novel example of CARPET BEDDING recently attracted our attention at Windsor, which deserves notice from its simplicity and effectiveness. On the extremely steep grass slopes at the base of the round tower of the Castle are several large circular beds, each of which is divided into four sections that radiate spirally from the centre. These sections are planted alternately with a dwarf uncommonly dark-foliated variety of the common Beet and the Golden Feverfew, affording a striking yet beautiful contrast when viewed either from the battlements or the road leading to the tower. There are also smaller beds which contain ordinary bedding plants, such as Lobelias, Pelargoniums, and Calceolarias, that considerably add to the bright and lively appearance of the slopes. One bed was raised in the form of a mound about 3 or 4 feet in height. This was carpeted with *Sedum hispanicum glaucum*, several good plants of *McNevenia metallica* and *Sempervivum* being scattered over the surface. In another position of the Castle we observed a small courtyard most agreeably enlivened by a ribbon border that was planted with the peculiar but pretty Lobelia *Olsen* and Calceolarias; the light yellow of the latter and the pale reddish purple or pease colour of the former harmonised very pleasingly. The condition in which the whole of the Castle grounds are maintained is highly commendable, for good order and neatness everywhere prevail.

—IN the Temperate house at Kew the handsome evergreen shrub *DESFONTAINEA SPINOSA* was recently flowering freely. This attractive plant is allied to the *Gentiana*, and was introduced from Peru about 1860. The leaves bear some resemblance to the common Holly, as they are of a shining dark green colour, and the margin is spiny. The flowers are solitary and axillary; the corolla long, tubular, wax-like and bright scarlet, while the five lobes are bright yellow. In habit the plant is rigid but compact, and it succeeds well in a pot in a compost of loam, peat, or leaf soil and sand; it requires cool treatment, but must be protected from frost, and is well suited for the conservatory or greenhouse.

—DURING a recent walk through GOVEY GARDEN we noticed that some small fruits were in great abundance, especially Strawberries, Black Currants, and Gooseberries. Cherries were not very numerous, Red Currants were only to be seen in moderate quantities, and Raspberries were rather scarce. We remarked that Peaches, although in fair numbers, were very unripe, and Grapes were certainly below the average. Large quantities of Peas are now being brought in daily, but prices still continue rather high.

—THE CARNATIONS AND PICOETTES in the garden of Mr. E. S. DODWELL, the indefatigable senior Secretary of the southern section of the National Carnation and Picoet Society, are still extremely fine. Mr. Dodwell grows upwards of a thousand plants in 7, 8, and 9-inch pots. They are placed on platforms raised about a foot from the ground, and the best varieties when in flower are protected by stout awnings of canvas, and in a light well-ventilated greenhouse. Late as the Show was this year, it was yet a week too early for Mr. Dodwell; he was yet, however, highly successful, and may be proud of the position he attained in the prize lists. Since the Show some seedlings of great beauty have expanded, and some idea of the extent of this phase (seedling raising), of Mr. Dodwell's practice may be formed when it is stated that he has tabulated descriptions of four hundred flowers this year. The seedlings are grown and flowered in beds, but all the best of them are being potted now for layering. This is a great work for one pair of hands, for the owner does all his own layering. But it is done with expedition. After the grass is trimmed a small, thin, sharp penknife is thrust through the stems and drawn downwards through a joint and out on the outer side of each layer, thus forming a tongue. When the whole of the layers on a plant have been tongued they are pegged into light and very sandy soil, which is placed on the surface of each pot. The pegs are of galvanised wire, and from nine to ten thousand will be required this year—some of the layers needing two pegs to fix them in position. About a hundred pots are layered each day, the layers averaging about ten in each pot. The soil being kept moist roots are speedily emitted, when the young plants are potted and wintered in the

— and the greenhouse. The appearance which this collection now presents is one of great beauty, and the plants are delightful. The admirable condition of the plants and the splendour of the flowers afford convincing evidence of the great value of the Carnation as a suburban flower, and a far more generally, for close by the garden at Rye, Clapham, is the London, Chatham, and Dover Railway, in which trains pass every few minutes, flooding the air with volumes of smoke. This is no doubt the finest collection of Carnations and Picotees to be found, and all true lovers of flowers, are welcome to see them. The present week, however, the best flowers will have been seen. It is difficult which section to admire most—the rich and self, the gorgeously marked Bizarres and Flakes, the pure grounds of the Picotees with their clear and well-defined lacing. There is no wonder that the demand for these hardy flowers is increasing, and that Mr. Dodwell is necessary to root every layer to meet the requirements of many friends. Fine as are the best varieties now in flower it is certain, if Mr. Dodwell's health permits, that valuable additions to this grand genus of plants will come from his skill and labour—a labour of love.

— THE Exhibition of the northern division of the NATIONAL CARNATION AND PICOTEE SOCIETY will be held on Thursday next in the Botanic Gardens, Manchester, the Local Council granting £10 to the prize list conditionally the show be held in the Gardens on a Saturday, otherwise the Exhibition would have been held on the day previously as was originally chosen by a majority of the members of the Society. In the schedule two classes are open to all, two classes of four hundred pairs of plants or less, and two to classes of 150 pairs or less, with the usual prizes for single plants, and a special prize for twelve selfs.

— MR. DOWNS of Edinburgh states that HARRISON'S EARLY MUSK, bedded out in the north of Scotland, has stood the winter and is now splendid. Mr. Hunter of Lambton also speaks in high praise of this Musk as a bedding plant. He has this year five thousand plants of it bedded out, which are giving great satisfaction.

— THAT the herbaceous PEONIES, which include the Japanese varieties, &c., are not sufficiently grown we infer from the fact that they are only occasionally seen in collections at the numerous horticultural exhibitions. At the recent Edinburgh Show Messrs. Hooper & Co. of Covent Garden exhibited some very beautiful varieties, which were much admired; and the collection staged by Messrs. Dickson, Brown, and Tait at the National Rose Show held at the Botanic Gardens, Manchester, was very fine. By far the largest and most varied collection we have met with in private gardens we recently saw in the gardens of Poynton Towers, Cheshire, the property of Richard Christy, Esq. The plants were large and foliage bold and striking, while the flowers were bright in colour and yet delicate, embracing every shade of colour—white, salmon, crimson, violet and purple. In form the flowers ranged from the most perfect of doubles to the pure and simple single form; some of the varieties were also fragrant. The best portion of this collection came from M. Jules Maréchal, fils, à Bourg-la-Reine, France. Mr. Christy takes great care in these plants. The border in which he grows them is of deep rich soil, while the plants are liberally treated with liquid manure both in the autumn and growing season.

— APROPOS of the VINES IN GERMANY August is called by the growers the *Koch-monat*, or nursing month—the month in which the young bloom fills and swells into the Grape. But just may nurse as she pleases; there will, says a correspondent in the *Daily News*, be no Grapes, or only bad Grapes, this year in that part of Germany which includes the region of the Moselle and the famous Johannisberg. The cold winds of the wet of July rotted the tender Grape flower on its stalk, and swept away all promise of vintage.

— THERE are growing at the present time in the gardens of Coombe Cottage two or three long rows of an old Pea known as JAMES CONQUEBOR, and in the opinion of Mr. Baker this Pea for productiveness and excellence of quality will put many the newer Peas in the shade. The pods are  $3\frac{1}{2}$  to 4 inches long, but every pod is very firmly filled, and contains seven or eight very large and bright green peas, delicious in flavour and possessing every good quality desired by the cook. Mr. Baker thinks most highly of it. Perhaps an objection to some may be the great height it has attained this season—over 6 feet, but all Peas have this year grown above their average height. It appears to be an improved and selected form of

Ne Plus Ultra, and it is a most desirable Pea to grow where both quantity and quality are desired.

— MANY of our readers are not aware that there exists in some of our most smoky manufacturing towns men whose love for the beauties of Nature leads them to form SOCIETIES FOR THE PURPOSE OF STUDYING OUR NATIVE PLANTS. We recently had the pleasure of attending a meeting of one of these societies held in Union Street, Church Street, Manchester, and there we found over thirty members, who had on the Saturday afternoon taken long excursions and collected specimens of wild plants, Ferns, and Mosses, which at this meeting were freely discussed. The President, Mr. James Percival, named every specimen laid before him, which on the occasion of our visit must have numbered from two to three hundred. These working botanists follow all the week their various avocations in the workshop, factory, or the mill; and while the pursuit after botany adds to their knowledge, it also procures for them fresh scenes and purer air, which is conducive to a better state of health. Their knowledge of British plants would surprise many of the best of gardeners, while many of them are good pteridologists and muscologists. The Society we refer to was originated in 1836, and from its ranks have passed away several men highly respected for their knowledge. Among them may be named Mr. Richard Buxton and Mr. John Nowell, men whose talents were so well recognised that their correspondence reached from the peasant to the peer. These Lancashire botanists, to their praise be it said, carefully preserve the natural habitats of all wild plants, and frequently make journeys to Scotland, Ireland, and Wales in pursuit of their favourite study, and many of them are acquainted with the geological formation on which every British plant is to be found. Mr. Thomas Rogers, Oldham Road, Manchester, has been the Secretary to this working band of botanists now for many years, and though formerly a millwright, he is now conversant with almost every Fern whether British or exotic, and besides possesses a thorough knowledge of plants, mosses, shells, &c.

— MR. W. ODDIE, late of Rye Court, Ireland, has been appointed gardener to Henry Ovey, Esq., Roydon Lodge, near Ware. Mr. D. Jones, late foreman at Syston Park, Grantham, succeeds Mr. Poole as gardener to Selina Lady Milton, Kirkham Abbey, York; and Mr. R. Blackstock, late foreman at Brayton, Carlisle, succeeds Mr. Lister as gardener to W. P. H. Vaughan, Esq., Golden Grove, Roscrea, Ireland.

— WE regret to announce the death on the 18th inst., aged seventy-one, of Mr. JOHN WEEKS at Temple Dinale, Hitchin, where he has resided since his retirement from the business. Mr. Weeks was a man of great business aptitude, and by his skill and energy gave a great impetus to the erection of horticultural structures, and established the repute of the firm whose erections and mode of heating have been extensively adopted in both large and small establishments in this and other countries. The death of Mr. Weeks will in no way affect the business, in which he has not taken any active part since 1869.

— SNAILS AND SLUGS IN GARDENS.—We were very much troubled with snails and slugs for several years. This year I have reared two broods of ducks, and soon after being hatched they were turned into the garden every morning, and there they remain all day. It is astonishing how busy the little things are all day running after all the insects they can find, and I find they do much less harm than the snails and slugs. When the ducklings become large it is well to keep them out of the garden.—C. EDWARDS.

#### OUR WILD PLANTS.

MR. BONSON'S notes on British plants, on page 463 of the last and page 106 of the present volume, have much interested me as a lover and student of our native flora, both in cultivation, and especially as regards alpine plants in their native haunts.

Lycopodium Selago is certainly the most singular of the genus, yet its oddest feature is not mentioned. Most of the genus possess, like the Selaginellas, the habit of seeking fresh pasture by growing at the proximal end somewhat faster than they die at the distal or (original) root end, thus tending to spread radially from their first station. The L. Selago effects this in a different manner by throwing off its growing ends in the form of viviparous buds, arranged whorl-like near the points of the shoots. These buds rest stiffly upon elastic scales or bracts in such a manner that on being brushed obliquely by

a passing sheep or by the hand they skip away, tip-cat fashion, to some distance, where such as meet with suitable quarters start into life on their own account. Unlike Mr. Robson, I have often found it sheep-nibbled, and find on tasting my growing specimens no special bitterness—nothing so unpleasant as the taste of the Ivy and Holly, which sheep readily eat. I find the Selago easy of cultivation, though it is sometimes killed by slugs eating the growing ends; an injury the plant seems unable to repair, as, like the Spruce it so curiously mimics, it has little or no reserve of dormant buds. I have it in a full north exposure where it has stood the late winter well, and is starting freely. If Mr. Robson cares to grow the plant I could soon send him some of the aforesaid buds, which readily start in a damp shady corner or under a glass.

*Lycopodium selaginoides* I find also tractable. It has a resemblance to *S. denticulata*, and though sometimes called an alpine, grows freely down to the 1000 feet level at the head of Llanberis Pass. *L. Selago*, too, grows (in Snowdonia), at all heights from 600 feet in Nant Gwynant to 3200 feet on the Glyders. Among the wilderness of huge blocks which make the summit of Glyderfach the most weird and wondrous crag scene in south Britain, may be found "cold frames" as it were of Nature's making, recesses where depth and shelter make amends for the want of lights or glasses, and floored with an inch or two of decayed moss. Here may be found lovely tufts and patches of *Phegopteris* and other Ferns, and here I have found the *L. Selago* perfectly rampant—nearly 2 feet high, yet with hardly a table-spoonful of roots, which and some inches of the stem are often in appearance dead, yet carry most vigorous heads, as though, seaweed fashion, the plant merely used its foundation for support and drew its nourishment from the atmospheric moisture, fully two-thirds of its life being spent inside the clouds. *L. clavatum* and *L. alpinum* I have always failed to keep alive any length of time. Specimens secured in August last on Y Lliwedd, where for the first time I found the two growing together (height 2500 feet), are alive but not thriving.

The *L. clavatum* is hardly the common Club Moss in the Snowdon country, where Selago is far more frequent; but the most abundant of the species, if you go high enough, is *L. alpinum*. It, however, rarely descends below 1800 feet, except in places especially cool and cloud-haunted. I have found it at the 1200 feet level on Y Foel-berfedd.

*Saxifraga oppositifolia* was profusely in bloom, a friend told me, at Whitesuntide in Cwm-glas, high up on the Snowdon side of Llanberis Pass, and about 2000 feet above sea level. I have been there perhaps a score times, and even in summer find it difficult to avoid seeing the plant, so thickly does it cover the rocks, especially the somewhat calcareous volcanic ashbed—now hard as the porphyry itself—which, perhaps from its deficiency in lime, it and other of the alpine so common there seem to avoid. It grows, too, on the greenstone, also somewhat calcareous. I have it well established in an open north aspect, where, within a space the size of one of your pages, I counted thirty-two open blooms, most of which lasted from March 2nd until April 15th, and a few well on into May. It grows high up the rocks on the N.E. face of Helvellyn above Red Tarn, where in May, 1866, I first saw it in bloom—one of those sights one can never forget. In April, 1871, I found it flowering profusely near the top of Y Fan-big, one of the Brecon Beacons, but only on one narrow ledge, which it nearly covered. At one end a coarse grass, which I carefully disestablished, was trying to crowd it out. The range consists of old red sandstone, and its cliffs present northward a magnificent geological section. They rise to within 20 feet of the height of Cader Idris.

The purple Saxifrage is thought by some to be difficult of cultivation, but here (Sale, Manchester), it grows and multiplies, though not by seed, as easily as Thyme or Stonecrop. In a wild state I never found it below the level of 1800 or 2000 feet—a level at which, in unsettled weather, the clouds will often float for days together, and at which the type of vegetation seems in many respects to change, notably in the abrupt cessation of the Heaths, though the *Empetrum nigrum* struggles on to nearly double the height.

Cwm-glas is quite a garden for alpine. It and other places I could name need to abound with Holly Fern, now nearly rummaged out by guides and collectors. The following are still plentiful—*Sedum Rhodiola*, *S. Forsterianum*, *S. rupestre*, *S. purpureum*, quite distinct from *S. Telephium*, which I have not found nearer than in Anglesey (see "Phytologist;" is this paper still published?) *S. anglicum*, &c. Among Saxifrages,

*oppositifolia*, *stellaria*—alpine in habit, yet often carried down by floods; I found it last July close to Llyn Gwynant—*nivalis* I have not found, though it is recorded by Bingley and some late writers; *hypnoides* and *caespitosa*. *Silene acaulis* is abundant, though Wordsworth thought it so rare except in Scotland. Mine in cultivation nearly went off this spring, but is recovering. It seems to detest the snowless east winds of the lowlands. A very robust Thrift also grows in the Cwm (thecombe of the south of England), also an Eyebright with large purple flowers. *Paraley Fern* is a weed as it were, especially on the scree, while the "ashbed" has its lines of weathering tufted and feathered with *Asplenium viride*, *A. Trichomanes*, *A. Ruta-muraria*, and various forms of *Cystopteris*, &c. This and other rocks have in many places been grooved and fluted by the action of long-extinct glaciers into the likeness of pilinths and base-moulds of some Titanic temple.

It is a grand place wherein to spend a long summer's day. From it you may reach the top of Snowdon, muscularly by climbing Crib-y-ddygyl and walking westward along its edge, but the climb would hardly suit those afflicted with nerves; or easily by going westward up steep grass until you open out Carnarvon Bay and the S.W. horizon, when a few yards, level or nearly so, land you in the Llanberis track about a half mile below the well-known spring, keeping the summit of Crib-y-ddygyl to the left. The ascent of the mountain is from this side easily done in ten minutes, and is worth the trouble if only for the view of the main peak, which overtops it by but 80 feet or so.

That these alpine have, thanks to snow, no very severe cold to suffer, is proved by the index readings of an Elliott's minimum thermometer which I fixed twelve years ago on my favourite Lesser Glyder at a height of 3220 feet. The earlier the mountains are snow-clad the higher remains the index, which thus seems to read inversely as compared with lowland observations.—H. B. B., Sale, Cheshire.

P.S.—I find *Saxifraga hypnoides* and *caespitosa*, as well as in less marked degree *oppositifolia*, avoid if they can a very strong light. In the open the shoots form a promiscuous mat, but if near a wall or shrub tend thereto as though combed out in that direction.

### THE LATE HAILSTORM.

MR. DEAN'S desire to render aid to the suffering by the terrible storm is a worthy one, but his appeal would be much more powerful and meet with a better response if he could state that the owners of glass structures cannot be insured against ruin by hailstorms. Farm crops, of course, can and are insured, and it would almost appear that garden crops and glass houses are not accepted by the Hailstorm Insurance Company, otherwise it is difficult to imagine, after the great loss incurred by florists and others two years ago, that a body so industrious and generally prudent should risk ruin which, by a little sacrifice, might be averted. As considerable doubt exists as to whether glass structures can be insured, it would be well if Mr. Dean, whose action is very commendable, could state the facts of the matter. If such property as that referred to cannot be insured, except perhaps at excessively high rates, the affluent would the more readily render aid where it appears to be greatly needed; and if it can be insured, the special publication of the fact would have the effect of inducing those to protect themselves from loss who have hitherto refrained from doing so.—F. R. H. S.

### EUCALYPTUS GLOBULUS IN GUERNSEY.

THIS is now in bloom here, and a more beautiful tree it would be difficult to imagine, standing as it does about 53 feet high, with a well-proportioned head. The fine creamy white flowers with their multitude of stamens contrast admirably with the glaucous foliage.

The structure of the bloom is very exceptional, the stamens being contained in a lid much resembling the cup of a large acorn. As the stamens grow in size and strength this reversed cup is pushed off and falls to the ground, which in this case is quite strewn with them. The under part or seed vessel on which the stamens are arranged is much like the aforementioned lid though larger. This encasement is highly scented with the same peculiar aroma as the leaves when crushed. This tree is growing in a garden at Foese André. I have not been able to ascertain its age. Miss D'Auvergne of St. Jacques last year felled a tree that was then twenty years old, and though it lost its leader three times (in one instance

8 feet) it attained the height of over 60 feet, having in its first twenty months grown 20 feet. When a tree in Guernsey reaches 60 feet high it has much to contend with, as the wind at some seasons is excessively strong. There are many hand-

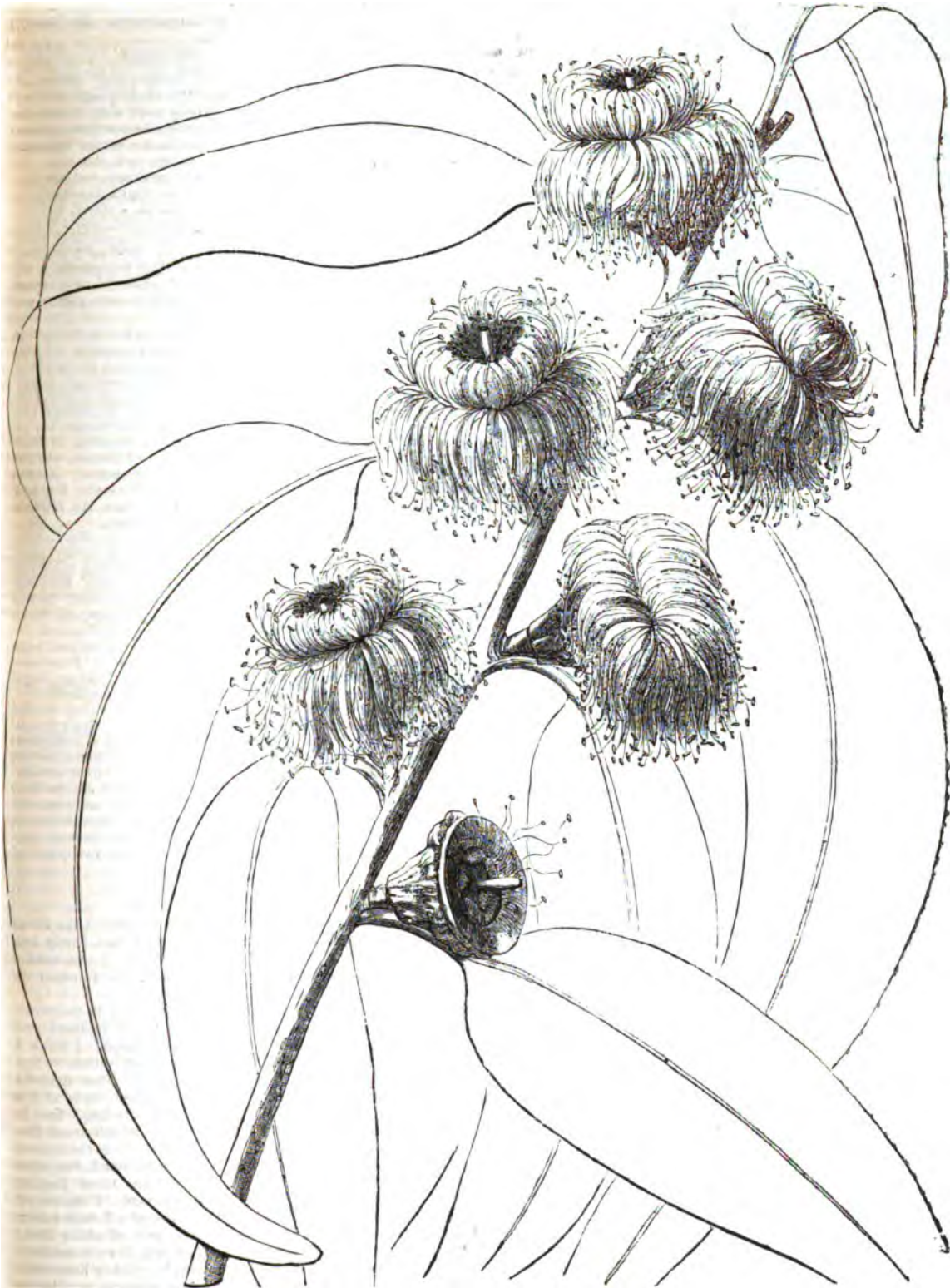


Fig. 19.—EUCALYPTUS GLOBULUS.

some specimens in the island, but I have seen none flower as freely as that first described.

The Eucalyptus should be planted in a garden sufficiently sheltered. I suspect that plants produced from home-grown



seed would be rather more hardy than those imported from Australia. Would you inform us what has been the general effect of last winter on this plant?—H. C. S., *Guernsey*.

[Ninety-nine out of a hundred of the trees in England were unfortunately killed. We regret this the more after seeing the great beauty of the flowering branch sent, a spray of which is represented in the annexed engraving.—EDS.]

## BISHOP AUCKLAND HORTICULTURAL SOCIETY.

AUGUST 18TH.

THIS favourite northern Show was held under unfavourable circumstances. The date was fixed a fortnight earlier this year than last in the hope that better weather might be experienced, as for three successive seasons the weather has been adverse, and never worse than this year. There is one pleasing fact that the Committee may congratulate themselves on—namely, that the new Bishop of Durham affords the Society the use of the park and the benefit of his patronage. The park itself is finely wooded, the ground is undulated, and a stream of water meanders through the centre—an admirable place for a horticultural Exhibition; and we may mention that passing the gates of the place, where we could get glimpses of the flower garden, the bedding seemed particularly fine; an abundance of bloom was on the Geraniums, the Violas and Lobelias being especially well flowered and were better than any we have seen this wet season.

To return to the Show. For the season of the year the products in all classes were exceedingly good, although in many classes there was only poor competition and florists' flowers were scarcely represented. In the open class for six stove and greenhouse plants the Society offered five prizes, the first being £9. This has generally brought numerous entries, but only two exhibitors entered the arena this year. Mr. Johnston of Elmdridge near Darlington secured the first prize with well-flowered plants, consisting of a very fresh *Bougainvillea glabra*; *Clerodendron Balfourianum*, very good; *Ixora Dixiana*, a fine plant profusely flowered and nearly 4 feet across; also a good *Genetilla tulipifera* well flowered, and a fresh plant of *Allamanda Schottii*. Mr. Noble, Woodhorn, Darlington, was second, his best plants being *Bougainvillea glabra*, *Erica retorta* major, *E. Massoni* major, and a fresh example of *Phenocoma prolifera* Barnesi. There were four competitors in the class for six fine-foliated plants. The plants on the whole were very creditable and filled a good area of the tent. Mr. Westcott, Raby Castle, was an excellent first with finely coloured examples of *Oretons undulatus* and *Johannia*, good specimens of *Gleichenia apelluncæ*, *Cyathea dealbata*, *Geonoma gracilis*, and *Alcasia Lowi*. Mr. Niel Black, gardener to Mrs. Pease, Darlington, was second, staging good plants of *Cocos Weddelliana*, *Encephalartos villosus*, and *Maranta roseo-picta*. Mr. Noble and Mr. Lazenby, Woodside, Darlington, were placed equal thirds.

For six exotic Ferns there were also four competitors, Mr. Westcott being again first with *Dicksonia squarrosa*, *Davallia Mooreana*, *Gleichenia Mendeli*, and *Davallia polysticta*, the young growth of which was beautifully tinged with bronze; and a very fine *Todea superba* over 8 feet across. Mr. Johnston was second, his collection including the fine hanging Fern *Goniophlebium subauriculatum*, the fronds of which were over 6 feet long. For six British Ferns Mr. Niel Black was first, and Mr. Johnston second.

In the class for twelve stove and greenhouse plants there were four collections, and the plants presented a very imposing appearance. Mr. Johnston, Mr. Lazenby, Mr. Noble, and Mr. Black were awarded the prizes in the order named. Some very fine stove Orchids and foliated plants were staged in this class. The class for two Orchids only brought out two competitors. Mr. Noble was first with *Cattleya crispata* with three fine spikes; *Miltonia spectabilis* was also good. Mr. Westcott was second, his *Saccolabium Blumei* with three fine spikes being very good.

Zonal Geraniums have always been a special feature at Bishop Auckland, and the plants on this occasion were meritorious, but some of them were trained too flatly. Mr. Stockey Greenfield was first, and Mr. Wrather second. This was a very effective class.

There were only three competitors in the class for twenty-four Dahlias; in preceding years there have often been nine or ten. Mr. Clark, Rodley, was first with very fair blooms for the season of Criterion, Perfection, Queen of York, H. Watson, James Cocker, Henry Bond, Royal Queen, Burgundy, Mrs. Harris, John W. Lord, Thomas Wyatt, and Vice-President. Mr. Hitchin, Charlestown, and Mr. Shaw, Kidderminster, secured the remaining prizes. For twelve Dahlias there were five competitors. Mr. Joseph Barrow, Brough Hall, was first with a good stand; and Mr. Harkness, Allendale, second.

**ROSES.**—For twenty-four blooms, dissimilar, there were only three competitors; Mr. Burrell, Heighington, being first with Marie Baumann, Capitaine Christy, Louis Van Houtte, Etienne Levet, Madame V. Verdier, François Michelin, Alfred Colomb, Princess Beatrice, Empress of India, La France, Star of Waltham, Ferdinand de Lessepe, Dr. Andry, and Duke of Edinburgh. Mr. Whit-

well, Barton Hall, a successful amateur cultivator, being second, and Messrs. Mack, nurserymen, Catterick, Yorkshire, third. The three stands were very good indeed, and the Judges had no easy task to determine their relative merits.

Bridal and hand bouquets were not numerous. Mr. Lazenby secured the chief prizes in both classes.

In the next section, from which nurserymen were excluded, Fuchsias were very fine. Asters were also well shown, also Roses, in which Mr. Whitwell easily secured the chief prize. Herbaceous plants were exceptionally good. Mr. Wrather, gardener to Mr. Pease, Greencroft Hall, Darlington, being first with *Spiraea palmata rosea*, *Achillea serrulata*, *Alstroemeria aurea*, *Erigeron speciosus*, and a fine variety of Monkshood—*Aconitum variegatum*. Some very good table plants were also shown in threes.

**FRUIT.**—This was a special feature of the Show, and some excellent produce was staged. In the class for eight dishes, distinct sorts, there were three competitors. Mr. J. R. Jowsey, gardener to Gilpin Brown, Esq., Sedbury Park, Richmond, was first with Black Hamburg and Muscat of Alexandria Grapes, both good; excellent Royal George Peaches, Violette Hâtive Nectarines, Largo Negro Figs, Strawberries, Cherries, and Raspberries. Mr. Laidler, gardener to the Rev. J. Burrow, Castle Eden, was second, staging good Black Hamburg and Buckland Sweetwater Grapes, and Royal George Peaches.

Mr. Jowsey also won the first prize in the class for six bunches of Grapes in three or more varieties with fine examples of Barbarossa, Muscat of Alexandria, Black Hamburg, and Foster's Seedling; Mr. Westcott being second with Black Hamburg, Muscat of Alexandria, and Waltham Cross; Mr. Witherspoon taking the remaining position. His three bunches of Black Hamburg were fine in colour and shape, and received much admiration, but his white Grapes were not fully ripe. For two bunches of black Grapes Mr. Larkin, gardener to the Bishop of Durham, was first with two fine bunches; Mr. Witherspoon being second. For two bunches of black, not Hamburgs, Mr. Larkin was also first with Black Alicante; and for white Grapes, not Muscats, Mr. Westcott secured the first place with Pearson's Golden Queen.

Peaches were excellent, nine dishes being staged. Mr. Lazenby was first with Exquisite, which was exquisite in every sense. Nectarines were of average excellence, Mr. Niel Black being first with Elruge. Strawberries were magnificent; Mr. Harkness, Allendale, was first with very large finely coloured fruit. Melons were few and seemed of inferior merit. Apples, Pears, and Plums were also inferior, no doubt owing to the unpropitious season.

**VEGETABLES.**—Some excellent dishes of Potatoes and vegetables were staged. Mr. Ryder's eight dishes of Potatoes—International Kidney, Grampion, Myatt's Prolific, Rivers' Royal Ashleaf, Excelsior, and Webb's Imperial were really splendid.

The remaining section of the Show to be noticed is that devoted to the amateurs—certainly a most deserving class. Their florists' flowers and vegetables were particularly fine, in fact in some cases excelling the products in the open classes. The Committee and Secretary, Mr. Hendry, acted with promptitude in all their arrangements which were admirably carried out. Plenty of Judges were provided, and the work was quickly and well done, and appeared to give general satisfaction. We trust that this once fortunate Society may in the future have better weather and be well supported, and again have shows second to none in the north of England.

## A TRIP TO WALTHAM.

ON the occasion of my visit to Waltham to inspect the Roses I was doubly unfortunate; in the first place I had barely two hours to spare for the inspection, and secondly I was unable to see Mr. Paul himself, and had to make his foreman do instead.

One principal object I had in view was to see in their own quarters the two fine new Roses Duchess of Bedford and Countess of Rosebery, and I was not disappointed. I think I shall never forget a bed about 15 or 20 feet square of fine strong dwarf plants of Duchess of Bedford. This splendid new Rose seems to be distinct from any other; it is of the brightest crimson with a slightly darker shading, fine in foliage, and very free in growth and flowers, which are of fine shape with abundance of stout petals. I think it is the nearest approach I have seen in colour to John Bright, but far superior to that fine Rose in form, &c. If it is not the finest English Rose ever sent out it is certainly unsurpassed. Countess of Rosebery is also doubtless a very fine Rose of a lighter colour than the other. It grows almost as freely as a climbing Rose, but with strong stout shoots; the blooms, which are something after Victor Verdier, have very large petals. Other Roses sent out by Mr. William Paul and growing in abundance are Magna Charta, free in growth, making a fine pillar Rose, but with rather loose flowers; Star of Waltham, very fine, and May Quennell, excellent in growth, foliage, and flower. Of other seedlings not yet introduced to commerce there are several



which will probably improve upon acquaintance. The best appeared to be *Masterpiece*, a very promising Rose, after the style of *Star of Waltham* and *Pride of Waltham*, which somewhat resembles the *Eugenie Verdier-Marie Finger* race.

Of the new Roses other than those sent out by Mr. Paul the following were very fine:—*Alfred K. Williams*, Al in every particular—a splendid acquisition; *Gabriel Rosmer*, very large, deep rose colour; *Marchioness of Exeter*, very fine, similar to *La Ville de St. Denis*; *Richard Laxton*, a very fine dark Rose of the good old *Maréchal Vaillant* type; while the new ones, *Madame Nabemann*, pale flesh colour, and *Madame Lambert*, bright rose, with the Hybrid Tea *Madame Alexandre Bernier*, a beautiful pointed globular flower, similar in colour to the good old *Tea Adam*, will all be wanted by the grower of the choicest varieties.

Of the older varieties there is a very large assortment in cultivation, and I was glad to find that the queen of all, *Marie Brummans*, had this year been as fine as ever. The blooms were a little past the best at the time of my visit, but there were still some magnificent flowers. At Waltham, again, most large Rose-growing nurseries, nearly all varieties are tried upon all stocks in order to ascertain which suits them best, and, as I had thought the very contrary, I was very much surprised to see that the poor-growing but splendid Rose *Louis Van Houtte* does better both as regards growth and flowering on the *Manetti* than on the seedling *Briar*. I should like to know whether this is the case at other places. *Mons. E. Y. Tess*, *Charles Lefebvre*, *Charles Olibo*, *Alfred Colomb*, *Salmon de Zansibar*, and *Duke of Edinburgh* among the dark varieties were in splendid condition, as were the light varieties *Madame Lacharme*, *Duchesse de Vallombrons*, *Captaine Christy*, *La France*, *Marie Finger*, and *Princess Beatrice*.

In coming away I saw three or four men hard at work building a large piece of *Manetti*. This piece contained between 20,000 and 30,000 stocks; and some idea of the number of Roses cultivated here may be formed when it is considered that there are equal or greater numbers on other stocks, seedling *Briar*, standard, &c., besides an enormous number in pots. My time was now up and my train was due, so that I had to run off without being able to inspect the fruit and other departments of this fine nursery.—J. B.

## THE OLD MARKET GARDENS AND NURSERIES OF LONDON.—No. 25.

SPENDING towards the metropolis by the Brighton or South-Eastern lines of rail, between New Cross and Spa Road stations, there is an impression that one is travelling over land not much above the level of the Thames, an impression tolerably correct; and a multitude of lines intersect each other, the spaces between and around these being, to a considerable extent, occupied by market gardeners. If the train is not proceeding very rapidly the traveller may take note of the various vegetables under culture, fruit not being produced in any quantity, probably because the atmospheric conditions are unfavourable. Many new streets are springing up: "like mushrooms," says the penny-aligner, and he is tolerably accurate, for the houses have a fungoid feebleness, and their foundations are in the damp. The Londoner who has often visited his city's suburbs may probably compare the district to that of Battersea, where now, however, there are even more railways crossing, and houses are also more numerous. A visitor from abroad would also be somewhat surprised were he told that from the market gardens of London suburbs quantities of produce are sent every year to towns in the north of England. It is a plan found to be advantageous to both grower and consumer, even at the present not very moderate railway charges.

Year by year there are such changes in the vicinity of London, owing to the increase of buildings, that it is difficult to estimate the land under cultivation in any particular district; but there are still many acres of open land lying not far from the river—in Bermondsey, Deptford, and New Cross. Since 1875 builders have taken possession of a large tract of land near Peck, Breaux & Co.'s factory, which was garden ground till then, and which is fast being covered with inferior houses, massed together far too closely. Certainly the inhabitants have the advantage of market gardens near them, amongst which they may stroll, for the land is broken up by numerous roads and footpaths; indeed, the comparatively exposed condition of the garden ground hereabout is either a testimony to the honesty of the people living near, or else on calculation the growers find it cheaper to submit to a per-

centage of loss of produce rather than make and maintain affluential fences.

Bermondsey, however, in some portions of it is hardly likely to tempt the most speculative of builders, and we imagine for many years to come it will have its market gardens, amongst which it is impossible to distinguish those of ancient date from those which have been formed more recently by the cultivation of grass or waste land, when some of the garden ground was taken for other purposes. At one period these gardens extended close to the Thames at Deptford, and towards Greenwich. The recently formed Southwark Park was also a fine dedication of a part of garden space to the public benefit. The closing syllable of "Bermondsey," as in other localities, implies a watery situation, and it once had even its islands; and its Spa, to which pleasure grounds were attached, was formerly a popular resort. Numerous streamlets flow towards the river. Some of these are said to have been artificially made in the fourteenth century to free the land from an overflow of water, for in or about the year 1294 there was a "great breach" at Rotherhithe, and probably many acres laid for a considerable period under water. During the building of a church at Bermondsey the excavators came upon the remains of an old wood, peat being dug up formed of trees and rushes, and through some antiseptic influence "quantities of nuts were found still hanging upon the branches." *Domesday Book* also states that there was woodland for five hags at least in Bermondsey, and moors were there, at one season of the year, an important article of food for swine, sometimes for mankind. If we are to believe the prognostics of some folks about this year's harvest we might do well to prepare ourselves for such diet. Ascoms, though not over-palatable, are certainly nutritious.

There cannot be a doubt that the first market gardeners at Bermondsey were some of the Flemings, who, on their arrival in England about 1550, settled in various places near the coast of Kent. Finding that the new vegetables they introduced were generally liked by the English several of them migrated, coming nearer to the metropolis, where they could be sure of a ready market for what they grew. Travelling through Kent they passed by way of Lewisham or Blackheath to settle again at Bermondsey and Deptford, getting land there at a low rent no doubt. This would be towards the end of the sixteenth century; one or two more adventurous, "stepping westward," went on to Nine Elms and Battersea. Hartlib, writing in 1650, refers to the astonishment awakened by the crops of Cauliflowers, Carrots, Turnips, and Parsnips, which old men told him were unknown as growing plants until they were reared by these emigrants. One of the species that was largely cultivated in the Bermondsey gardens probably was the Jerusalem Artichoke, for Parkinson observes that in the reign of Charles I. the tubers were so plentiful in London that even the common people despised them. The name "Potato" was originally given to these, which it was the fashion then to bake in pie with small birds (such as larks), dates, or raisins, &c.

Asparagus was another of the specialties of the Flemings, and Evelyn, who resided at Deptford, no doubt received from some market gardener in his vicinity the fine specimens of Dutch Asparagus which he describes, and which were grown in richly manured soil; for his own part, however, he owns that he gave the preference to the smaller sort. But he extols the general virtues of this vegetable, recommending that it be eaten raw with oil and vinegar. At Sayes Court he himself made sundry experiments in horticulture, and when Samuel Pepys paid him a visit on May 1st, 1665, he seems to have been astonished at Evelyn's garden. Incidentally, in his note upon that day's doings, he drops us a useful remark; for he went also to Wricksmarsh House, where, he says, he saw the first vineyard he had seen in England, proving thereby that the various vineyards which once flourished near London City had disappeared before the civil wars. We are informed that the descendant of John Evelyn who now holds Sayes Court has converted the garden into a pleasure ground for the people of the neighbourhood. It is recorded, or should be recorded, in the annals of culinary plants that Rhabarb, seeds of which were sown in England during 1660, was not regarded as anything except a curiosity, unless cultivated for medicinal purposes, until about seventy years ago, when Mr. Myatt of Deptford sent his sons to the Borough Market with five bunches of the stalks, and they could only sell three of these. The name of "Rhabarb" caused a prejudice against it, but when it became a favourite the demand was soon greater than the supply. The Myatts were market gardeners at Deptford for many

years; subsequently we find Mr. W. Myatt occupier of the Manor Farm, Lewisham, where there was a sale of plants in 1875, the land being required for building. Myatt's Ashleaf is a favourite Potato, perhaps having its origin at Deptford. We have noticed, by-the-by, that Rhubarb and Coleworts are frequently the last plants grown on land which market gardeners are about to relinquish.

Those who wish to visit the market gardens yet extant at Bermondsey and Deptford may reach them by the Old Kent Road, turning out of it on the left, either down the New Rotherhithe Road or the Manor Road; they are divided by the Surrey Canal, and as already stated, cut up by numerous lines of rail. On the right side of the Old Kent Road towards Peckham there was also formerly some extent of garden ground, and we remember observing one or two nurseries thirty years ago; to our surprise one of these still remains in the Trafalgar Road, though now it has very little land attached to it. Pursuing the Old Kent Road to its end we come to Hatcham, once quite rural, and having a park-like domain, the residence of the Hardcastles, and where we may yet find the Manor Farm. Beyond this is New Cross. Here, some fifty years since, the late Edward Newman had a ludicrous *rencontre* while gratifying his enthusiasm for entomological pursuits by the chase of the Clouded Yellow Butterfly. He says: "Dian's nymph Hyale has led me a merry dance amidst the blooming Lucerne. It was where the Croydon railway intersects those Surrey hills which constitute the first glimpse of country as we emerge from the fuliginous sea of London habitations; it was here in market gardens forbidden to the public that I made her acquaintance. There were employed a multitude of female Hibernians in the healthful pursuit of horticulture. On one occasion my quarry led me into their midst, when lo! they abandoned their occupation, and pursued me with the very same energy that I was wasting on the yellow-robed nymph." The insect has vanished from the spot, few of the market gardens are remaining, and fields of Clover and Lucerne must be sought further in the country. Mr. Orman's nursery at New Cross is one of the oldest in the district. It bears the name of "Florence," from its proximity to Florence Road, not because it is representative of the Italian style of gardening. Berkley's nursery is close to the North-Kent line, and at the junction just beyond St. John's station a small but prettily arranged nursery has been surveyed by travellers ever since the line was constructed, we believe. It has recently been converted into a private residence apparently. Amersham Road, New Cross, boasts of a "parfumeur chemiste," but we don't know whether he grows there the plants that he distils. The sign of the "Rosemary Branch" in Lewisham Road is a reminiscence of some early "physic garden."—C.

#### MESSRS. SUTTON & SONS' ESTABLISHMENT, READING.

ALL who are interested in either horticultural or agricultural pursuits that happen to have an opportunity of visiting the premises of this eminent firm will, I am convinced, think the time occupied in doing so well spent. This at all events was the opinion of myself and companion—a very practical gardener—after our "run through." It is almost impossible, without apparently exaggerating, to give a description of the warehouses, offices, &c., and we, who to a certain extent were aware of their magnitude and the vastness of the trade of this firm, were still quite unprepared for the reality. The first week in August, as far as the seed trade is concerned, was far from the best time to pay a visit, as no doubt it is one of the slackest times of the year, the principal work going on being the preparation for the immense stock of seeds bulbs, &c., shortly to be accumulated; but on the other hand we were fortunate in being able to inspect the very instructive trials of Peas, Lettuces, Beet, Potatoes, &c., annually conducted at their trial farm. The systematic arrangement and completeness of the various offices and buildings, including a splendid recreation room and library for the use of the employés, café and lecture hall, &c., are, I may safely say, unique. Although the Messrs. Sutton do not actually grow all the seeds they distribute, yet none are sent out but what are grown especially for them by competent growers from stocks of which very careful pedigrees are kept by the firm. Great pains are taken in the selection, dressing, &c., of seeds which are subjected to severe tests both as to their vegetating powers and also to the truthness of the strain, whether they be minute flower seeds or vegetable, farm, and grass seeds.

Seeds intended for export through tropical districts are specially prepared by being subjected to a very high dry temperature, thus preventing the loss of a great percentage of seed by fermentation during transit. We went into one room stated to be of the same temperature as the hold of a vessel in the Red Sea, and not having any superfluous flesh we wished to be rid of, soon made for the door again. The seeds intended for export are packed in air-tight tins, of which there were large quantities of various sizes in store, which from their superior make and finish must prove very serviceable in many ways to the importers. Such at all events is the evident aim of the exporters. Steam power is used to drive the machinery in use in the warehouses, dressing rooms, &c., and very great precautions are taken in the way of having a good supply of water, hose, and engines in the event of a fire breaking out; in fact, if I remember rightly, Messrs. Sutton have their own fire brigade.

The houses devoted to the growth of florists' flowers situated within easy distance of the warehouses are well adapted for the work, and at the time of our visit were filled with many thousands of well-grown plants, all raised from seed of the same strains as those distributed. The house of large-flowering Begonias was wonderfully attractive; the plants either singly or collectively were grand, and a finer strain we have never seen. They were unusually compact, and were bearing a great profusion of very fine flowers of all the hues to be met with in this extremely beautiful and useful section of the genus Begonia. The collection included several remarkably fine double-flowering varieties, which were flowering freely. Two other houses are devoted entirely to Gloxinias, and a grand lot of plants they contain. They are from seed sown this spring, and will soon present a very fine display. The foliage is particularly good (a very excellent characteristic of the strain), nearly hiding the pots, and many very fine blooms were already expanded. Cyclamens, too, are grown in large quantities, and will eventually give a fine display. The foliage is particularly attractive, which is of importance. Cinerarias, Primulas, Calceolarias, &c., are all being brought forward. They have also a fine lot of Caladiums, and a batch of the pretty and useful pot plant *Streptocarpus biflorus*. It is grown in a cold frame, and will produce its blue Gloxinia-like blooms throughout the remaining summer and autumn months. It is sometimes called a hardy Gloxinia, and it certainly resembles a Gloxinia in its habit and flower and ought to be more generally grown.

In the grounds in which the houses are situated are grown many of the choicest annuals, and judging from those we saw the strains of Stocks, Zinnias, Marigolds, &c., are particularly good, and the colours very true to name. We were, however, rather too early for the Asters and a few other species.

We were next conducted to the trial farm in which the very large beds of showy annuals are sown which prove so attractive to the occupants of the trains passing on the Great Western and South-Western railways. Very conspicuous were the beds of Rockets, Larkspurs, *Convolvulus minor*, *Chrysanthemum Burrigeanum*, &c., Clarkias, Candytuft, *Nasturtiums* (*Tropæolum*) of the Tom Thumb section, which are useful for bedding-out, as they do well either in wet or dry seasons, thriving where many other plants fail. A good substitute for Calceolarias are the miniature French Marigolds, both orange and yellow, which were very true to name.

In another part of the farm we were shown good sowings of all the varieties of Peas, Lettuces, Beet, &c., catalogued by Messrs. Suttons, which afford excellent opportunities for noting the merits or demerits of the many varieties grown. The earliest Pea was found to be Suttons' Ringleader, but the Emerald Gem followed it closely, and is in every other respect the best Pea. William I. was also very good. Following very closely upon these we observed Suttons' Bijou, a dwarf free-bearing Marrow Pea of fine size and quality. Among the medium-height Peas very noticeable was Suttons' Prince Leopold, a variety that stands dry weather, and judging from its appearance when we saw it, is also equally useful in a wet season. Dr. McLean fully maintains the high character given it; and among the taller varieties Fortyfold, Suttons' Giant Emerald Marrow, Duchess of Edinburgh, and the Emperor of Marrows were bearing well, and are all of undoubted excellence. Lettuces were at their best, and none surpassed that useful variety for summer work, Suttons' Superb White Cos. All Heart and Suttons' Champion Brown Cos were also very fine. The Green Ground was also very good; although not much to look at, the flavour is much liked by some. Among

the Cabbage varieties the most noticeable were Blonde de Berlin, Suttons' Queen, Standwell, and New Fringed, the latter on account of its singularly ornamental style of growth. Of the Beet, for beauty and evenness of foliage none surpassed Suttons' Dark Red and another new variety, the leaves of which are of the same dark crimson colour, but are longer and narrower. The strain of ornamental Chilian Beet is a good one, some of the varieties being exceedingly handsome and well adapted for subtropical gardening, &c. Many other varieties of vegetables, grasses, roots, &c., are being tried, but want of time prevented a close inspection and curtailed what was to us a very enjoyable and instructive visit, which was greatly enhanced by the courtesy and kindness shown to us.—W. IGGULDEN.

### RIVINAS.

THE majority of plants natives of tropical regions that require to be grown in a stove when introduced to our temperate climate, are characterised by either graceful brightly coloured and variegated foliage, or by handsome and fragrant flowers. But there is another class of plants which, though well represented in our shrubberies and greenhouses, is almost entirely absent from the stove—viz., plants that are useful for ornamental purposes owing to their pretty and attractive berries. Indeed if we exclude the Rivinas and Ardisias there is scarcely another of this description to be found with any pretensions to beauty, unless it be the curious Mistletoe-mimic *Rhipsalis salicornioides*. This is certainly a great deficiency, as the length of time that berry-producing plants continue attractive, and the pleasing variety afforded by the bright colours of their small fruits, render them extremely valuable for gracing the shelves of houses during a great portion of the year, for table decoration and decorative purposes generally. On this account the genus Rivina is an especially interesting and useful one, or at least such of the species that are best known to plant-growers—*R. humilis*, *R. laevis*, and *R. lutescens*. About seven other species have been introduced, but they are rarely to be met with except in botanic gardens, and they are decidedly inferior in a cultural point of view to the three mentioned. With one exception all are natives of the West Indies and South America; and that one, *R. latifolia*, is very widely separated from its relatives, for it is found in Madagascar.

The species which is most commonly seen in cultivation is *R. humilis*, and this was introduced some time during the seventeenth century, as it is stated to have been grown in England previous to 1690. The merits of the plant are of no ordinary character, and it is only of late years that growers have begun to appreciate its beauty as a table plant, for which purpose the graceful habit and bright berries render it particularly appropriate. There appears to be some little confusion respecting the identity of this plant, as it has frequently been mistaken for *R. laevis* and *vice versa*; but there is no occasion for the uncertainty, as they are easily distinguished by anyone who has seen the two growing together. *R. humilis* has downy acutely ovate dark green leaves, and racemes of dark crimson or crimson-scarlet berries, is moderately erect in habit, and of free growth.

The cultivation of the plant is remarkably easy; it can be increased either by seed or cuttings, some growers preferring the former method, others the latter; but it is of little consequence which mode is adopted, as nearly equally good results are with ordinary care obtained in both cases. If the plan first mentioned is preferred strong cuttings should be taken in early spring, inserted in sandy soil, and placed in a warm corner of the propagating frame. When well rooted the young plants should be potted singly in thumbs or small 60's, employing a light soil composed of loam, leaf soil, and sand, providing good drainage. As the plants will grow quickly if placed in the stove or a house of similar temperature repotting will soon be required, and this must be attended to so as to avoid giving a check to the growth. They may be shifted into 5 or 6-inch pots, employing a similar compost to the last, and this size pot will be found the most convenient and useful for the plants to remain in.

Flowers are produced freely, and appear to be quite independent of insects for fertilisation, as nearly every flower is succeeded by a perfect fruit at all periods of the year. One defect is occasionally experienced—viz., a tendency of the berries to fall prematurely; but we are inclined to regard this as chiefly due to an insufficiency of water at some time, or possibly to a deficiency of nutriment in the soil. As a remedy

we recommend careful attention to watering and frequent supplies of weak liquid manure. Seed should be sown in March, and when the young plants appear they may receive the same treatment as cuttings. Flowers and berries are produced through a great portion of the year, and with a good stock of plants a succession may be maintained from January to December. A little judicious pruning is sometimes required to preserve a good form, or training may be resorted to; and here we may mention, that although rarely seen so treated, it succeeds admirably if trained to a wall or trellis. The purpose for which it has been principally grown of late years is table decoration, and few plants could excel it for gracefulness and beauty. The racemes of berries are also invaluable for epergnes and vases, and interspersed amongst flowers and foliage their effect is charming. It is somewhat surprising that market growers do not take up its cultivation, for undoubtedly it would be readily sold. A few specimens planted out in a stove or intermediate house will afford a valuable supply of sprays for cutting, and the racemes will be larger and more plentifully produced than when the plants are growing in pots.

We have referred at length to the cultivation of these plants under *R. humilis* because that is the most common, and also for the reason that the other species succeed with precisely similar treatment. *R. laevis* is distinguished from *R. humilis* by its perfectly smooth shining leaves and looser habit, but the berries resemble those of the latter, except that the colour is brighter. This plant is also an old one, for it was cultivated by the noted Philip Miller in 1733, so that no doubt it appeared in this country very shortly after the other. This is equally beautiful, and as well adapted for ornament either in the stove or on the dinner table as *R. humilis*, and deserves to be much more extensively grown.

There is another form which is occasionally seen in good gardens that is named at Kew *R. lutescens*; this bears yellow berries, and thus forms a pleasant and striking contrast with the crimson berries of the other species. It is of more recent introduction than the others, and requires precisely the same treatment. The berries are smaller than those of the other species, and the plant is not quite so attractive, but no doubt it would improve under more extended cultivation.—LEWIS CASTLE.

### ON CIRCUIT.

TAUNTON.

My last assize for the season (if I except the possible one of Brie-Comte-Robert, at which I have been asked to assist) was at this pleasant county town of Somerset, where for some years it has been a happiness to me to renew and keep alive a friendship which originated on a mere chance salutation from one English youth to another on a steamer on the Rhone forty-two years ago, and to act as Judge at the most flourishing autumn show I know of in England; and as we looked round on the thousands that thronged the Vivary Park on Thursday last, our thoughts involuntarily looked back to those days when the brutal Jefferies held his bloody assize in the town in the autumn of 1686. We sometimes talk of the good old times; but, if we could only see it, these are the good times, and such scenes as on Thursday met the eye, when the whole town was *en fête*—not to welcome an aspirant to a throne, but to do honour to that gentle pursuit which almost everywhere in England finds a hearty following—shown in what happy times of peace and loyalty we are living.

I have no hesitation in saying that the Exhibition of this year was not only superior to any of its predecessors, but that it was the very best autumn Show I have ever seen; of course there was a deficiency in out-of-doors flowers. Not a *Gladiolus* was seen, *Asters* were few and wretchedly poor, and *Dahlias* were scanty. How Messrs. Keynes got those in that they did show was a marvel not only to me, but to so good a grower as Mr. Turner. But the stove and greenhouse plants in flower and foliage were superb, and I very much doubt whether a tent so full of specimens of first-rate plants was ever exhibited in the month of August at any provincial show, and certainly not at any metropolitan one. The Society very liberally offered for the best twelve stove and greenhouse plants in flower prizes of £25, £15, and £10. There were four entries for them, and the prizes were taken by Mr. Cypher, Mr. Williams of Worcester, and Mr. Pilgrim. Mr. Cypher's plants were *Olerodendron Balfourianum*, *Erica Irbyana*, *Allamanda Hendersoni*, *Ixora Cyphertii*, *Erica venosa*, *Bougainvillea glabra*, *Dipladenia amabilis*, *Allamanda grandiflora*, and *Lapageria alba*. Mr. Tudgey had *Erica ampullacea*, *Dipladenia hybrida*, *Allamanda nobilis*, *Anthurium Scherzerianum*, *Erica parmentaria* roses, *Eucharis amazonica*, *Allamanda Hendersoni*, *Olerodendron Balfourianum*, *Statice profusa*, *Dipladenia amabilis*, and *Erica Irbyana*. In the class for six stove and greenhouse plants Mr. Pilgrim was first with *Dipladenia*

amabilis, Erica anstrica, E. Thompsoni, Allamanda Wardleyana, Anthurium Scherzerianum, and without doubt the finest plant of Rhododendron Princesa Royal that I have ever seen, or perhaps has ever been exhibited.

So great and so even was the competition in the class for foliage plants that the Judges were compelled to give two equal firsts and two equal seconds. The firsts were gained by Mr. Lawless and Mr. Pilgrim; the equal seconds were Mr. Cypher and Mr. Williams. Mr. Lawless' plants comprised *Alocasia intermedia*, a grand and faultless plant; *Croton variegatus* and *C. pictus*, finely coloured; *Livistonia altissima*, *Latania borbonica*, *Croton Weismanni*, *Cycas revoluta*, and *Euterpe edulis*. Mr. Pilgrim's were *Croton undulatum*, very fine; *Cordyline indivisa lineata*, *Croton Weismanni*, *Cycas imperialis*, *Gleichenia rupestris*, *Encyphalaros villosus*, *Gleichenia semi-vestita*, and *Cocos Weddelliana*. Mr. Cypher's were *Gleichenia Mendellii*, *Croton majesticum*, *Pritchardia pacifica*, *Latania borbonica*, *Croton undulatum*, *Dasylirion acrotrichum*; while Mr. Williams had *Croton Johannis*, *Gleichenia heterophylla*, *Croton pictus*, *Latania borbonica*, &c.

Where all round the Show was so good, fruit (indoors) being excellent and vegetables fine, it may seem invidious to particularise anything, but as an *habitué* of flower shows I may mention two exhibits which I think struck most people—Mr. George Prince's *Roses* and Miss Cypher's bouquet. The former were the best forty-eight I have seen this year, and Mr. Turner and I agreed that such a stand was never shown in the month of August by any exhibitor before; the size, substance, and colour were alike wonderful. Amongst the most noticeable were Charles Lefebvre in wonderful colour, Marie Baumann, Devienne Lamy, Duc de Rohan, very fine; Marie Raby, as good and large as Marie Baumann; Louis Van Houtte, very fine; Alfred Colomb, Comtesse de Nadailles, most lovely; Madame Victor Verdier, Annie Wood, Duchesse de Moray, Marguerite Brassac, Marquise de Mortemart, Exposition de Brie, with a hue of brownish crimson in it quite distinct from either Ferdinand de Lesseps or Maurice Bernardin.

The bouquet exhibited by Miss Cypher was the most exquisite one I have ever seen. Is there anything so impossible to describe as a bouquet? Suffice it to say that this displayed the most consummate knowledge of the art combined with refined taste. There was not a flower with any glaring colour in it. The blue was the soft blue of the *Agapanthus* sparingly used; the red and yellow were combined in an orange-coloured *Ixora*; there was the lovely soft pink of the *Dipladenia*; while the whites were the beautiful and elegant *Panacrastrum*, *Lapageria alba*, *Stephanotis*, and *Francosa*; and with the Maidenhair made a most lovely ensemble. Her table decoration was also excellent. It was arranged for ten. In the centre was a Marsh stand with a trumpet top, and at either end a small plant of *Cocos Weddelliana* with some specimen glasses, all arranged very lightly and elegantly; and I must say that although the present fashion is in favour of low decorations on the table, I prefer those of this character, where, as in this case, the view is not obstructed.

The indefatigable labours of the Committee and the able Secretary, Mr. Clement Smith, were crowned with success. A fine day brought in thousands from the neighbourhood, and upwards of £800 was taken at the gates, besides the large number of subscribers' tickets used. It is thus that they do things in the "West Country."—*D. Deal.*

#### REVIEW OF BOOK.

*Arran, its Topography, Natural History, and Antiquities.* By the LANDSBOROUGHs, Father and Son. London: Houlston and Sons.

THIS little work has much to recommend it, not only to the general reader but to the naturalist and antiquarian, for we find recorded the observations of that eminent and genial naturalist the late Dr. Landsborough. The island of Arran, so well known to tourists in the Hebrides for its exquisite and varied scenery, is described in a most delightful and edifying manner; its history, botany, zoology, indeed every matter of interest connected with the island, is treated so exhaustively, accurately, and eloquently, that the reader cannot fail to perceive it is the production of a finely trained and highly educated mind. There is also a charming originality and freshness in the style that is rarely to be met with in modern works. The author is especially happy in his descriptions of the picturesque scenery, and of this we notice a good instance on page 18, where the writer is describing the views obtained by a voyage round the island. He continues thus—

"Two views far surpass all the others—those from the bays of Sannox and Brodick. Sannox is seen to greatest advantage from the sea, and never is more enjoyed than when rowing leisurely on a summer evening from South to North Sannox Bay, for thus there is time fully to take in the whole impression of its grandeur. Not so grand as Glen Sannox, but adding to grandeur much greater beauty and variety of attraction, is the view from the south-east of Brodick Bay. Let it be seen from a boat on a sum-

mer evening, when the light clouds floating in the sky cast shadows moving mysteriously over the landscape; when the ridges and fine peaks of the rugged encircling mountains, burnished by the golden beams of the setting sun, stand in striking contrast with the deep shade of the far-receding glens; and when the mellow light of evening, with its calm and holy stillness, is settling upon and softening the green fields, rich woods, and happy homesteads, encircling the slumbering waters of the immediate foreground."

In the next chapter is an account of "the great achievement of a visit to Arran," the ascent of the mountain of Goatfell, upwards of 2866 feet in height, and here on page 24 we find another eloquent description.

"The view from the summit of Goatfell is one of the most extensive and magnificent in Scotland. Some of the more notable objects are so distant that they lose much of their impressiveness; but the nearer view embraces a combination of sea, frith, and loch—of island, bay, and rocky promontory—of deep solitary glens, frowning precipices, and rugged, jagged, savage pinnacles and mountain ridges, unequalled in the British Islands.

"Look from the giddy height of proud Ben-Gholl  
On peaks innumerable, sky-clearing;—Look  
Adown the rugged cliffs precipitous  
Into the dark, and deep, and narrow chasms,  
Those gulfs obscure, which from each other part  
This vast assemblage of gigantic hills."

After mentioning all the principal features of the island in a picturesque point of view, the author proceeds with an elaborate and entertaining review of its natural history. On page 117, after observing that the Bearberry (*Arbutus Uvae-ursi*), is common in Arran and blooms in April, he states that

"Later in the season the moorland is adorned by the very beautiful Milkwort (*Polygala vulgaris*), resembling a little dark blue humming-bird with expanded wings; the bright golden *Potentilla* (*P. Tormentilla*), beautifully contrasting in colour with the Milkwort; the graceful *Orobis* (*Orobis maculata*) of spotted leaf, and with flower both spotted and streaked; *Gymnadenes conopsea* of rose purple hue and delicious fragrance; the tapering spike of yellow, star-like *Bog Asphodel*; and the blue clustering heads of *Jasione montana*; while the whole is one mass of bloom with the Heather or Ling (*Calluna vulgaris*); and the Cross-leaved or Cluster, and the Fine-leaved or Purple Heaths, or Bell-Heaths (*Erica tetralix* and *E. cinerea*)."

We might give many more equally instructive and pleasing extracts, for there is scarcely a page that does not contain some excellent passages that are well worthy of notice. However, we confidently recommend this work to all who desire a really enjoyable and instructive book, as one that combines pleasant reading with scientific accuracy without undue technicalities. The volume contains a complete list of the plants, also copious lists of birds, insects, fishes, and molluscs found in the island and the water contiguous.

#### HOW I SAVED MY CROP OF STRAWBERRIES.

IN previous seasons I have found that the most useful protection for the fruit was those wraps of straw stitched together which wine merchants call bottle envelopes. I employed an abundant supply for my Strawberry plants this year, for I had found them most useful, because they can be placed flat or edgewise, and are good traps for slugs and snails; but a month ago my Strawberries were beaten down to the ground by the heavy falls of rain, and were simply decaying as they ripened. I found my remedy in employing plasterers' laths. Two laths were tied together; short stakes about a foot to 18 inches above ground were inserted at intervals. The lath was placed under the fruit and tied to the stakes, and the fruit was supported from the ground. Next season I intend to place the supporting laths to my Strawberry plants when they are in bloom, so that when the fruit sets it may rest on the laths. I have no hesitation in saying that without the above I should have had no crop, and that the result has been very satisfactory to—G. O. S.

#### WORK FOR THE WEEK.

##### KITCHEN GARDEN.

Sow seed of *Canliflowers* in an open situation rather thinly, but in sufficient quantity to afford plants for pricking-off into frames and under handlights in October. Dwarf Erfurt Mammoth, Early London, and Walcheren are thoroughly reliable varieties. A sowing of Lettuces to afford plants for early spring use must now be made either where the plants are to remain, in which case the ground must be firm in a sheltered situation, or in beds rather thinly to admit of their being planted out in October. Brown of

Bath Black-seeded is an invaluable variety, being very hardy. Bath or Brown Sugarloaf and Hick's Hardy White are fine for this sowing, and of Cabbage varieties Stanstead Park, All-the-Year-Round, and Hammersmith Hardy Green are good. Radishes will require to be sown about every three weeks, and none are finer than the Olive-shaped, especially French Breakfast, and the Turnip varieties. The winter kinds, of which China Rose is far the best, should also be sown at once, also Black Spanish and Californian Mammoth. They require rich deep soil and must not be sown too thickly. There must not be any further delay in the last sowing of Onions, the Queen being very useful on account of coming in long before any of the Tripolis. Sow also Carrots and Winter Spinach. Plant out successional crops of Lettuces and Endive, preferably in firm ground, as the plants will probably be required for lifting and placing in pits or frames for protection in hard weather. Turnips of the early varieties may yet be sown. Plant out a good breadth of Coleworts at once, and any young healthy plants of Cauliflowers may be planted; if on good ground and well attended to they prove very useful if the early winter be mild. Kales and other winter and spring Greens may yet be planted, also Broccolis if ground has not become vacant before, moving them, however, with balls and watering them until established. Artichokes which have been two or three years on the ground will have ceased bearing and should be removed. Where young plants were planted early in spring these will soon afford heads and also give a good early crop next season, also furnishing young suckers for planting next spring. If the old roots are retained useless stems should be removed and all decayed leaves. If the weather be dry a few good soakings of liquid manure along the rows of Runner and Dwarf Kidney Beans, also late Peas, will help them considerably, and if the same attention be given to Asparagus and Seakale the heads will be correspondingly finer in the ensuing season. Choose dry days for earthing up Celery, affording liquid manure liberally to this crop if the weather prove at all dry. Keep up a supply of small salads by frequent sowings. Cut off a good supply of herbs, such as Basil, Sweet Marjoram, Summer Savory, Mint, Thyme, Sage, &c., placing them under cover to dry for winter use.

#### HARDY FRUIT GARDEN.

In consequence of heavy rains, and to some extent scantiness of crop, fruit trees have required more than usual attention in stopping. This more particularly applies to bush, pyramidal, and espalier trees which have not yet ceased growing. There must not be any delay in stopping the growths to one leaf, unless the shoots show at 2 or 3 inches growth a plump terminal bud, which most likely will turn out to be a fruit bud; at least such short stubby shoots are those most wanted, and under no circumstances should they be removed. Apricots have cast much of the fruit in stoning, also Peaches and Nectarines, which proves that the wood was imperfectly ripened in the previous season. The forerights of Apricots should be kept closely stopped or altogether removed, laying in the wood somewhat thinly and the spurs not too crowded, all as close to the wall as possible. Peaches and Nectarines will ripen the wood best if the shoots are trained in rather thinly, cutting out any gross growths, and stopping any that are disposed to grow too long and too vigorously. Over-luxuriant Peach and Nectarine trees are best brought into a fruitful state by lifting. Pears against walls should have the growths closely stopped to one leaf, and any strong forerights are best cut away. Those on the free stock very often make much breastwood, particularly when the space allotted to the branches is somewhat limited, and as the trees do not lift well, ringing the branches should be resorted to profusely to root-pruning. Those on the dwarfing stock lift freely and safely, any undue luxuriance being checked by judicious lifting or root-pruning. Similar remarks apply to Apples, any trees of which growing too vigorously should be marked for moving as soon as the leaves commence falling. Plum trees against walls also make much breastwood, and are unfruitful; root-pruning will check their vigour and induce fruitfulness. Cherries, if a secondary growth be made, must be closely stopped, laying in the young wood of Morellos somewhat thickly, so as to take the place of those shoots that may be removed after the fruit is gathered. Those about to plant new trees near walls should have borders prepared as soon as possible, so as to have the soil ameliorated before the time for planting arrives, it being important that they be efficiently drained and the soil employed rather strong, and if there be an addition of about a tenth of chalk it will be advantageous to most fruit trees.

#### FRUIT HOUSES.

**Cucumbers.**—Encourage the plants for autumn fruiting to make a strong growth by adding fresh soil from time to time, affording plenty of water at the roots and moisture in the atmosphere, and maintain a temperature by artificial means of 70° to 75° by employing as little fire heat as possible. Plants must have the old growth well thinned, so as to encourage the growth of young bearing wood. The syringe should be regularly employed about 3.30 P.M., and if mildew appear dust with flowers of sulphur in the evening whilst the foliage is damp, maintaining a somewhat dry and freely ventilated atmosphere for a few days. Black aphides are unusually troublesome; those and the green aphides

succumb to repeated fumigation with tobacco paper, taking care not to give an overdose, to have the foliage dry, and ventilate rather freely the following day.

**Melons.**—It is presumed that the last batch of plants have been planted out; if not, it must be done without delay. Preserve the leading shoot till it reaches the trellis, when it may be stopped. Remove every alternate lateral directly they can be nipped out, maintaining a warm and moist atmosphere. The last batch in pits and frames have set the fruit very indifferently, it being next to impossible to secure a dry atmosphere even with linings and free ventilation. Earth-up the roots directly the fruit begins to swell, and the weather being dull diminish watering, although in bright weather copious supplies will be necessary. Keep the growths fairly thin, and examine frequently for canker at the collar, which is caused by an excess of moisture, and may be subdued by placing lime around the affected parts. Gradually withhold water at the roots and moisture in the atmosphere from plants ripening fruit, and if a little extra heat be given so as to admit of free ventilation the quality of the fruit will be enhanced considerably.

#### PLANT HOUSES.

**Stove.**—The earliest batch of autumn and winter-flowering plants, such as Poinsettias, Euphorbia jacquiniiflora, Krantheum pulchellum, Thyrsacanthus ratilans, Plantago coccinea, Centropogon, Sericographis Obolobrothiana, &c., will by this time have filled their pots with roots, but as it is not desirable to increase the size of pots weak liquid manure must be given occasionally to enable them to retain the bottom leaves in a healthy condition. The plants should be kept in a light house or pit near to the glass. Admit air freely by day, so as to induce short-jointed stout growth, with a little air at night to well ripen the wood. Later-struck plants must have encouragement by receiving every necessary attention to enable them to make strong short-jointed growth.

Achimenes past their best are often crammed anywhere out of sight, where they are allowed to remain to ripen; the consequence is they form small weakly tubers or die altogether. Instead of this they should be kept in a temperature as warm as is essential to grow them in, with water sufficient to maintain them in health until the scale-like tubers are fully ripened and the leaves and stems gradually die down, in which condition they winter more safely and the growth and flowering is much better the following season. Gloxinias require similar treatment, affording water to keep the soil moist, with sufficient warmth and light until the tubers are matured. Any varieties it may be desirable to increase may have the mature leaves taken off, inserting them in sandy peat and loam. Winter-flowering Begonias must not suffer through insufficient pot room, but be shifted into larger pots if necessary; but if this be undesirable weak liquid manure may be applied in a weakly state. *Medinilla magnifica* is an effective plant, but does not flower freely when grown in a hot and moist temperature. With drier treatment it flowers not only from the current season's growth but from the old wood. *Bougainvillea* and *Clorodendrons* with similar plants that have been in cooler quarters must be removed to the stove, but not to such warmth and moisture as to induce growth, but in a drier atmosphere affording water only to prevent the foliage going off too speedily, the growth being gradually hardened. *Isoras* that have been employed in conservatories must be returned to the stove before they suffer injury from too low a temperature. *Amaryllis* will now be fast completing their growth; and although they bear a low temperature it is not advisable, as many of the finer, and especially the evergreen forms, do not flower freely when subjected to it. In a house or pit with an intermediate temperature they ripen the growth perfectly, it being important that they have plenty of light and air not only when the growth ceases but all through the course of its formation. The drying-off of these plants as often done is a mistake, the soil should never be so dry as to cause the destruction of the roots.

**Orchids.**—Now that the sun has less power than it had earlier in the season the East India house must be kept moderately close and a growing atmosphere maintained. If the weather be dull the moisture must be reduced and recourse had to fire heat (which can hardly have been dispensed with this season) to maintain a temperature of 65° at night and 75° by day. The blocks must be syringed and the house damped down by about three o'clock, withdrawing the shading as soon as all fear of the sun scorching the foliage is past. *Aerides*, *Vandas*, *Saccolabiums*, and *Phalaenopsis* should have every encouragement to growth, as a check will result in the production of short leaves. *Phalaenopsis* growing in pots or baskets must not have the sphagnum brought into a sodden state, or the leaves will speedily become diseased. Light being of the greatest importance for the proper ripening of all pseudobulbous plants, shading on the Cattleya house must be dispensed with. *Barkerias*, *Cattleyas*, *Epidendrums*, *Dendrobiums*, *Laelias*, and many others if not thoroughly ripened produce weakly flowers followed by sickly growth. Vigorous *Cattleyas* sometimes make a second growth before the first is complete, in which case the plant should be encouraged to complete it as soon as possible. Where plants are



suspended to the roof they should be arranged over the paths or at the end of the houses, so that in watering or syringing the plants on the benches will not get the drip from those suspended. *Calanthe maculosa* and *O. veratrifolia* may now be repotted, shaking them out if the soil has become sour, the roots being washed in tepid water, repotting in a compost of turfy loam and peat in equal parts, with a little decayed dung and some pieces of charcoal about the size of nuts.

#### TRADE CATALOGUES RECEIVED.

James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea.—*Catalogue of Hyacinths and other Bulbous Plants.*  
William Paul & Son, Waltham Cross.—*Catalogue of Bulbs.*

#### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

**EXHIBITING VEGETABLES** (*M. W. Nicholson*).—Kidney and round Potatoes exhibited as separate dishes would count as two varieties in a class entitled "tray of vegetables, ten varieties;" but had the stipulation been a "tray of vegetables, ten kinds," the two dishes of Potatoes would not have been admissible. Round and kidney Potatoes are certainly distinct varieties of a genus or kind, and must be accepted as such, otherwise Regulation 5 in the schedule enclosed becomes a misnomer. According to the schedule no one could disqualify an exhibitor if he staged two dishes, distinct varieties, of Lettuces, Peas, Beans, Onions—indeed, of any vegetables in the same tray, although that might not be in accordance with the views of those who drew up the schedule. If distinct kinds of vegetables were required, as is generally the case, the term "kinds" ought to have been employed; but as that term was not adopted an exhibitor has no right to suffer for the mistake or oversight of an official, and the two dishes of Potatoes referred to must count as two varieties. The term "varieties," as employed in many schedules, is very misleading, being perplexing to exhibitors, and occasionally placing competent judges in an unenviable position. The term in question is rightly employed in your schedule in Classes 8 ("six cut Roses, not less than three varieties") 18 (*Antirrhinums*), and 19 (*Verbenas*) similarly specified, because it relates to varieties of the several genera; but in Classes 26, 40, and 67 (trays of fruit and vegetables) the term "kinds" ought to have been employed unless you allow duplicate dishes of different kinds of fruit and vegetables in the collections. In important fruit schedules it is usual and very convenient to insert a special proviso that black and white Grapes are allowed to count as two dishes in collections of say "eight dishes of fruit, distinct kinds," otherwise they would only count as one, as, like round and kidney Potatoes, they are varieties, not kinds. We have replied to your question rather lengthily, as we know from experience that much misconception exists generally as to the scope and meaning of the two very familiar and often misapplied terms—kinds and varieties.

**PANSIES DYING** (*E. H.*).—The plants are prone to wither and die in some districts in the manner you describe, especially where the soil is light and shallow, and when planting has been done late in the spring. The only remedy we can suggest is heavier, deeper, and rather rich soil, healthy plants being procured and planted during fine weather in March. As they grow a covering of short manure or cocoa-nut fibre refuse spread on the surface of the bed is of great service, and small sticks or pegs should be employed to prevent the plants being twisted by the wind; many plants are lost every year by neglect of this simple precaution. If your garden is exposed possibly your loss may be attributed in some measure to the boisterous winds that have prevailed during the present season, the plants not having been properly secured in the manner suggested.

**SCHEIDTIIIS COCCINEA** (*Bug*).—Our mode of culture is to turn the plants out of their pots in early spring and plant them in good soil in the garden. In the autumn they are taken up and potted, dividing the clumps if needed, but not separating the individual plants. Your plan of plunging the pots will answer provided you supply the plants with water as needed. We should not separate them now, but grow them on as you propose. A removal of a portion of the surface soil and an application of fresh compost would benefit the plants.

**LILYUMS IN BEDS** (*Idem*).—Nearly all the species and varieties of this grand genus thrive in beds provided the site and soil are suitable. The site should be a sheltered one, but not under trees, and if not exposed to the full glare of the midday sun so much the better. The ground must be drained if needed, as stagnant water about the roots is fatal to the bulbs and plants. The soil must be deep and fertile. It should be made good to the depth of at least 3 feet. If it is naturally heavy incorporate with it sand or grit, if light add fresh sound loam. If manure is needed let it be well decayed. Leaf soil, burnt vegetable refuse, and peat are useful additions except when the soil is very light. Surface dressings of manure are beneficial, protecting the bulbs in winter, and also enriching the soil and conserving the moisture in the beds during summer. As to varieties, the most practical advice we can give is that you state your requirements to the firm you name, intimating the proposed size of your bed, the number of bulbs you require, or the outlay you are willing to incur, and you may rely on receiving the sorts best suited for your purposes. Your proposed plan of grouping the lilies is good; they will thrive well if the soil is moderately fertile, and will look well in the position suggested. The tubers or bulbs may remain in the ground from year to year, care being taken that they are not injured by digging.

**SCENTLESS ROSES** (*Dublin*).—Your letter shall have our attention, and a reply will be given in ample time for obtaining plants.

**VARIOUS** (*W. D. H.*).—The specimen resembles *Sequoia* (*Taxodium*) sempervirens, the Californian Redwood, but if the tree is deciduous it is probably a variety of *Taxodium distichum*. The name of the Tulip Tree is *Liriodendron tulipifera*. It is a native of North America, whence it was introduced in 1663. It is included in the natural order Magnoliaceae. *Cistus ladaniferus*, the Gum Cistus, is a native of Spain and the south of Europe.

**SEEDLING VERENAS** (*W. C. Jew*).—The bright crimson lake variety with a yellowish white eye faintly tinged with violet is worth preserving, yet it is not superior to other varieties already in commerce. The lavender-coloured flower is much inferior to others of the same colour in cultivation.

**STRAWBERRIES FOR WINTER** (*West Riding*).—There is no great difficulty in producing ripe Strawberries in December. Mr. W. Hardney sent us some last year during the third week in December perfectly ripe and  $\frac{1}{2}$  to  $\frac{3}{4}$  inches in circumference. These are referred to and Mr. Hardney's mode of culture is detailed on page 463, No. 925, vol. xxxv. We recently saw the plants at Norris Green intended for fruiting next winter, and they were just showing their flower trusses. The varieties grown for the purpose in question are Sir Harry and Vicomtesse Hericart de Thury (syn. Garibaldi). You had better read the article referred to. The number can be had on sending 3d. in postage stamps to the publisher.

**FIG CULTURE** (*Ego*).—As you have access to a file of the Journal you may by consulting the indexes attached find much matter relative to Fig culture. Mr. Taylor in an article on page 377, No. 814, vol. xxxi., says a great deal in a few words on the subject, and attributes his success to annual root-pruning and summer thinning of the shoots. Standard Fig trees only appear to succeed in certain localities; but Col. Trevor Clark in a paper read before the Royal Horticultural Society on March 5th, 1878, and of which a résumé is given on page 84, No. 884, vol. xxxiv. of this Journal, expressed his opinion that a Fig orchard intelligently managed in the London district is an experiment well worthy of being tried. Your letter shall have further attention.

**RAISING GLOBE ARTICHOKE FROM SEED** (*J. Cuthbert*).—Many plantations of these were killed last winter besides your own, and consequently suckers are scarce. You can readily raise a stock of plants from seed. Had you sown in spring the plants would have produced heads early next year. We should sow now; and as it appears a matter of importance that heads be produced as soon as possible, we would grow a few plants in pots and winter them in a cool frame, plunging the pots in ashes. If these plants are planted out in rich soil next March or April, according to the weather, they will produce heads in the autumn when you appear to require them.

**AURICULAS UNHEALTHY** (*A New Grower*).—Unless the plants are larger than any we have seen, the pots you have employed are too large. If we remember rightly neither Mr. Turner nor Mr. Douglas pot their largest plants in pots exceeding 5 inches in diameter at the top; indeed very few pots are used of that size. Auriculas dislike too much pot room, as the soil then is apt to lose its sweetness, when the plants inevitably turn yellow, as yours have done, and decay. We should turn the plants out of the pots, removing a good portion of the soil from their roots and place them in smaller pots in which the roots will be a little cramped rather than otherwise. Employ sweet turfy loam with very little manurial additions, and drain the pots well. Place them in a frame behind a building where the sun does not reach the plants for several hours during the hottest part of the day. Water carefully, and if insects appear dust the plants with tobacco powder or snuff. By adopting this course of treatment promptly your plants will recover and flower freely next spring.

**PEARS AND APPLES PITTED** (*L. J. K.*).—The pitting has probably been caused by hail when the fruit was in a young and tender state. The rust we, in the absence of any data guiding us to a different conclusion, attribute to cold and wet soil. Your garden probably needs draining, and if the soil were enriched by surface dressings of manure the roots would be encouraged near the surface, and the trees would grow more healthily and the fruit swell more freely than is the case at present.

**TRANSPLANTING BOX EDGING** (*H. B.*).—You may safely remove Box edging in September, especially if the weather is dull and showery; if it is bright you must water the newly-planted edgings frequently, and if the slips are not well rooted it may be prudent also to shade them during the hottest period of the day.

**PERENNIALS** (*J. S. M.*).—The following will possibly meet your requirements:—*Dianthus superbus*, *Campanula nobilis*, *Lychnis grandiflora*, *Rudbeckia Neumannii*, *Spiraea filipendula flore-pleno*, and *Anemone japonica* alba.

**GROWING MUSHROOMS** (*C. H. Y.*).—The bulk of the material must consist of horse droppings, with a little half-decayed stable litter intermixed. A third of leaves may be added, and a tenth of loam, the whole being thoroughly mixed and pressed firmly into a bed from 9 inches to a foot in thickness. When the heat is declining, not rising, spawn may be inserted when the temperature of the bed is between 78° and 80°. Press lumps of spawn about the size of walnuts into the surface of the bed and about 8 inches apart. In about a week afterwards place on 2 inches of good loam and beat it very firmly. In about six weeks after that, if the bed and temperature are right and the spawn good, you may expect Mushrooms. You will find more copious notes by a successful cultivator in No. 888, vol. xxxiv.

**COTTAGERS' GREENHOUSE** (*A Cottinger*).—Had you stated the size of your greenhouse we should have been better able to have answered your letter. If the house is very small, say not more than 10 or 12 feet long, and of proportionate width, we think you are expecting too much. In such a house you cannot expect to grow many Cucumbers in addition to flowering plants. A propagating case such as you appear to need may be easily provided by forming a small frame over the warmest part of the flue, to be covered with one or more movable glass lights. If you place a sine tray about 3 inches deep on the flue and cover it with slates to support 3 or 4 inches of cocoa-nut fibre refuse, keeping the tray filled with water and the cocoa refuse moist, you may strike cuttings and raise seedlings without difficulty. A house for stove plants is made the same as one for greenhouse plants, but requires twice the extent of fine or hot-water-pipe surface to heat it. If you want to erect a house as cheaply as possible only the roof need be of glass, the sides or ends being of brick or stout boards. Wood is the best material for rafters and sashbars. Such a house if heated so that a night temperature of 68° can be easily maintained, would be well suited for growing Cucumbers and many kinds of stove plants. The Cucumbers should be trained to wires affixed about a foot from the glass. If you have a wall, a lean-to house will be much less costly than a span-roofed structure, and will not require so much fuel to maintain the requisite heat.

**AUBERGINES** (*Y. A. B.*).—The French people are extremely partial to these fruits, and the plant is extensively cultivated in Algiers, whence the majority of these fruits are imported to the English markets *via* Paris. Some are also grown in the south of France. The fruits are prepared in various ways, but the two following are most common:—Cut the fruit down the middle removing the seeds, then place the halves cut-side downwards on a

griddle and cook over a clear fire. The other plan is to simply cut the fruits across and across, and then cook in a frying pan, employing in both cases either Florence oil or butter, and flavouring according to taste. A catalogue of horticultural works may be had from Mr. W. Wesley, Bookseller, 25, Essex Street, Strand, London, by forwarding a stamp and stating that you require No. 26 of the Book Circular.

**CLIMBERS IN BOXES (J. H. S., Wellington).**—If the plants are growing satisfactorily, and there is no reason that they should not do so in boxes, you would act very unwisely by removing and placing them in pots. We do not understand what you mean by "planting Boxes on or under the stage," unless you consider placing them in boxes "planting" them, in which case they would be probably better on the stage; but everything depends on the length of the stems. The foliage must have all the light possible, but light for the stocks or stems is not so essential.

**CHRYSANTHEMUM UNSATISFACTORY (J. E. C.).**—If your object was to have dwarf bushy specimen plants the growths ought to have been pinched more frequently. It is too late to stop them now. The leaves have fallen from the stems either in consequence of the plants having been crowded too closely together, or by having been too dry at some time during growth. If you water them sufficiently yet carefully now, affording weak liquid manure occasionally, they may still produce good blooms; and if the plants when flowering are placed close together in the conservatory they will have a cheerful effect, and their naked stems will be in a great measure hidden. By no possible treatment can fresh foliage be produced on the parts from which the leaves have fallen.

**LIBONIA FLORIBUNDA UNHEALTHY (Idem).**—Root-action is probably defective. Turn the plants out of the pots and see that the drainage is efficient; remove as much of the old soil as you can without seriously injuring the roots, and apply a fresh compost of turfy loam and peat, pressing it in the pots rather firmly, and place the plants close to the glass in a light greenhouse or frame. As rains are frequent the Heaths should now be placed in a very light and well-ventilated greenhouse, exercising great care in watering them, giving water copiously when it is required, and never in dribblets.

**INSECTS ON PLANTS (E. P.).**—The plants are very much infested with thrips, and would probably have been in a worse state had the summer been hot and dry. Remove the worst leaves entirely and burn them, then syringe the plants thoroughly with a solution of Gishurst compound, 2 ozs. dissolved in a gallon of water, or the same quantity of soft soap, adding to each gallon of the solution half a pint of tobacco water. Apply it in a warm state, say of a temperature of 100° or 120°. Place the plants on their sides on a mat or something of the kind, so that in syringing them the soil does not become saturated with the solution. A little of it entering the soil will do no harm.

**NAMES OF PLANTS (Di De Dum).**—We do not undertake the naming of varieties of Zonal Pelargoniums and other florists' flowers. Such flowers can only be correctly named by comparing them with the varieties in a very large collection of flowering plants. (J. P. Bant.)—1, *Maxillaria venusta*; 2, *Cordylina australis*; 3, We think it is *Cassia corymbosa*, but a flower is necessary for identification; 4, *Hypericum perforatum*. (R. G. W.)—All the flowers were shaken to pieces, and we can only judge by the foliage and your descriptions. 1, Appears to be a Bourbon; 2, an Austrian Briar; 3, a *Noleste*; and 4, a China Rose; 5, *Is Cistus ladaniferus*, the Gum Cistus; 7, *Baccharis macrantha*. (A. C.)—1, *Deutzia crenata flore-pleno*; 2, *Lythrum salicaria*; 3, *Verbascum nigrum*; 4, *Liatris pumila*; 5, *Leucothoe spinulosa*; 6, and 7, too withered to be recognizable; 8, *Cassandra angustifolia*. (Amateur.)—The numbers had slipped off the specimens, so that we cannot name them consecutively. The *Oretons* are—C. *Weismanni* (long narrow leaf), C. *irregularis* (long leaf, broad base), C. *undulatus* (leaf elliptical, spotted with red). The specimen with small variegated leaves is *Peristrophe angustifolia aureo-variegata*. The remaining specimen is a *Gesnera*, probably *G. zebra*. (Feedside.)—*Stachys Betonica*. (M. M.)—1, Resembles an *Orebus*; 2, Probably *Gnaphalium albescent*; 3, *Corydalis lutea*; 4, *Centranthus ruber*; 5, *Marchantia polymorpha*. (A. H.)—*Asphodelus ramosus*; 2, *Lythrum salicaria*.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### THE SUMMER GRAZING OF CATTLE.

(Continued from page 137.)

WHEN accommodation sheds are erected in a suitable and central position connected with a number of pastures, or with a large tract of pasture land as they may be, whether erected in single range of boxes or double range with a small path in the centre, we have found them extremely convenient, whether the cattle resort to them for shade or shelter only, or whether the animals are fed therein with an allowance of artificial food. It is also found convenient in summer time for dairy cows when the pastures are situated a considerable distance from the farm buildings, in which they may receive green fodder as supplementary to grass or cake, &c., and they may also be sheltered in these sheltered boxes without having to travel far. We mention this to show that shelter cattle sheds are not recommended to be built solely for fattening cattle, but they may also be of use in the event of a change of system where a milking dairy may be required.

Our previous observations as to the system of buying cattle in the autumn for grazing in the following summer has the object in view of selling the animals fat at the best time. That is when they usually fetch the highest price per stone in the months of June and July, and when beef is probably more scarce in the

market than at any other time of the year, this being the period when the bullocks have been all sold out of the stalls and boxes in Norfolk and the eastern counties, and too early for the general sale of bullocks fed in the grazing districts of the various counties where the animals are fattened chiefly upon grass alone. This shows the policy of buying cattle in autumn or early winter and forwarding them in condition in the straw yards, &c., so that they may be ready for the market at the earliest part of the season when grass-fed oxen are most wanted by the butchers. There is, however, another plan occasionally adopted—that is, buying in lean animals or those forward in condition, the latter being the best practice in the early spring, and giving them a short course of feeding in the yards or boxes, thus acclimatizing them and bringing them into fair condition for feeding in the pastures as soon as the grass is forward enough to maintain them. In this case, however, it is seldom that the whole of them can be forward enough for sale out of the pastures. Therefore, the practice is, where arable land is formed upon the farm, as soon as the grass begins to get weak and stale about the end of September or the early part of October, to give the animals a little artificial food before leaving the pastures; after that put them in boxes and feed them until Christmas, when they ought not only to be in first-rate condition but fetch the full price of Christmas beef in the market. As soon as they are put to root-feeding we must caution the feeder against giving them hay, because we have found that when the bullocks are fed well upon a full allowance of roots in conjunction with cake or meal, hay, especially if it is the produce of arable land or rich pastures, often upsets the digestive organs. We prefer to give straw or straw chaff instead, upon which feeding we never find them to refuse their food, as they otherwise would do when fed at the same time with liberal quantities of roots, cake, meal, &c. We have just stated that the bullocks which are not forward enough in the autumn for the butcher are often held on and fed for Christmas; however, in peculiar circumstances, such as an occupation without any arable land to fall back upon for root-feeding, the animals are frequently obliged to be offered for sale out of the pastures when the grass fails both in quantity and quality, which generally occurs early or late in the month of October, according to the soil and situation of the pastures. We must therefore call the attention of the home farmer who requires to buy in cattle in the autumn for winter feeding to the advantage of buying at that particular time animals which are just beneath the butchers' quality. They are frequently sold for what they will fetch, and we have known animals pay better for feeding when taken into stock under such circumstances than when bought or fed at other times or under other conditions. Indeed it is a common practice with butchers themselves where they happen to be the occupiers of arable land, to buy the bullocks forward in condition, and at that time feed them well up to Christmas for slaughter in their own business rather than trust to the usual time of purchase, when the butchers usually require fat cattle to supply their Christmas customers.

We have often noticed during our travels in the southern counties and west midland districts, and particularly in the counties of Devon and Somerset, and also in Buckinghamshire, Northamptonshire, Cheshire, and Warwickshire, especially in our visits to some of the best grazing farms, including some in the Vale of Aylesbury in Bucks, that some portions of the grazing lands are only used as dairy land, whilst others are rich enough to feed and graze the animals without any assistance by artificial food. We have noticed also splendid herds of Hereford oxen, Devons, and latterly more Shorthorns are fed than formerly. It has been pleasing to see the number and superb condition of the cattle, the large enclosures, the richness of the grass, and the capital management of the district, which entitles it to be introduced here as an illustration of the rich grazing land to be found in many of the counties we have named. In some of the most extensive enclosures it is curious to notice the cattle and sheep; for herds of cattle and flocks of ewes, which have been purchased from different fairs, lie and feed in company in different parts of the pasture. Many scores of gigantic oxen are sent to the Metropolitan Market from some of the largest farms, and it is most interesting to see the size and condition of some of the cattle. At the first purchase of such animals care must be taken to select those which show an aptitude to fatten and accumulate flesh rapidly. It is different now from when we first knew these districts; it was not then difficult to purchase oxen of a good age. Since the idea of early maturity and the feeding of "baby beef" has become fashionable four or five-years-old cattle cannot be readily obtained, and in many cases farmers are frequently obliged to take up two or three-years-old steers for feeding, or otherwise worked oxen or barren cows; both of the latter, however, pay very well for grazing if they are well bred and in fresh condition at the time of purchase. The summer stock for some of the best grass land is a bullock and a sheep to an acre, and in some cases a ewe and a lamb and an ox can be maintained during the grass season; but it is of the utmost importance what breed of sheep are introduced to feed with the bullocks. We recommend the Leicester, Cotswold, or Lincoln breed, as they are each of quiet habit; and it must be understood that if any of the short-would

sheep of a roaming habit like the Downs and their crosses were kept in company with the bullocks, they would wander about the fields and tread the grass in such a manner as to make it unpalatable for the cattle. We mention this as being one of the important points in stocking the grass land districts.

Before concluding our subject we must refer to some rules to be observed both in buying and selling. It is never a good plan to buy cattle in low condition although they may be low in price, and it is necessary that they should be healthy, for sometimes cattle when in poor condition have disease lurking in them of some kind. When possible select the stock—that is, buy only the best animals; and in case the home farmer is a beginner, rather than trust to his own judgment in selection it is well to give a commission to a respectable agent who is in the habit of buying for other people. At the time of selling, if the home farmer has not sufficient experience to estimate the weight of his cattle by the use of his eye and his hand, it may be done by measurement. Taking the girth where it is smallest (close behind the shoulder), and the length of the animal from the front of the shoulder to the juncture of the tail, multiply the square of the girth in feet and inches by the length in feet, and multiply the product by 0.23, 0.24, 0.26, 0.28, or 0.30, according to the condition of the animal, and the result will give the weight in imperial stones. For instance, if the girth of an animal in moderate condition be 6 feet, the length 5 feet 4 inches, then  $6 \times 6 = 36 \times 5\frac{1}{2} = 192 \times 0.24 = 46.08$  stones; but this is still done by estimate according to ordinary fatness or excessive fatness. The above is the live weight. There is, however, a rule with a slide like a rule for timber measure to be had, which will save much time, and also prevent mistakes in calculation. When the live weight is ascertained as above, or by a weighing machine, well-bred cattle will give saleable meat, or carcase weight, from 60 to 70 per cent. of their live weight; if moderately fat 62 per cent. may be calculated on, or when excessively fat it may reach 68 per cent. or even 70 per cent.

#### WORK ON THE HOME FARM.

**Horae Labour.**—This must still be employed in tillage work, particularly upon the land which was intended for turnips. Much of this land in various districts has never been sown with crops of any kind on account of the very untoward season for fallowing. It will, therefore, now be well to allow such land to remain fallow until next spring, when it may be sown with barley or oats, applying a dressing of nitrate of soda. In the meantime, and at every opportunity when the weather is favourable, the land should be cross-ploughed. Unless it be foul with couch grass the rougher and more cloddy the ground remains the better, in order that the sun and wind may ameliorate the soil. It may remain thus until after the seed time for wheat; then upon the near approach of winter plough it up deeply into such sided ridges as the land may require. Allow it to remain in this condition until the seed time for Lent corn, when the first opportunity may be taken to drill the corn, as it will require no further ploughing and may be drilled with either barley or oats, the land being only scarified across before the drill. It will, however, depend much upon the land, because if that happens to be free from couch grass, and the autumn should prove favourable as regards the weather, it may be drilled with wheat in October, and with a dressing of 2 cwt. of Peruvian guano at seed time and 1½ cwt. of nitrate of soda in the spring it will probably upon anything like wheat land produce a good crop. Where the next wheat is to be sown out of clover lea, as soon as the second crop of clover is removed or fed down by sheep the dung may be laid out and spread immediately. This work will serve to employ the horses at such times when they cannot work on the fallows, and after the dung is laid out and spread the sheep may continue to feed over the land, or the clover may be allowed to spring up until ploughed, as a fog of young grass when the land is properly ploughed and pressed will be an advantage to the wheat crop.

The odd horse may be employed in the interculture of root crops upon every opportunity when the land is dry enough for the horse hoe to work freely without clogging. It is, however, of the utmost importance that this horse-hoeing should be done whilst the weeds are in their infancy, because then they may die off although the weather may be showery. When the weeds are grown up so strong as to compete with the roots the only chance is to have them picked up by hand. This is, however, very tedious work, and can only be accomplished where the labour of women and boys is available. A large acreage of roots which was entirely smothered with weeds has this year been ploughed. An old tenant of ours said the other day that he had paid 20s. per acre in endeavouring to clean his mangold crop, and that it would still cost 30s. per acre more to complete it even if the weather proved fine; therefore, as the mangold plants seemed stunted in their growth, he determined upon ploughing and resowing the land with common turnips as the best economy. It at present seems likely that the harvest must be the latest since the year 1816, in consequence of which the labour of the harvest will somewhat interfere with the tillage of the land in autumn after the crops are secured. Upon certain farms in the late districts it will

also interfere with the seed time and the preparations for wheat sowing, and thus it looks at present as if the difficulties of the present adverse season would be extended into the next year.

**Hand Labour.**—Both men and women may now be employed in clipping the white thorn and other fences, and all this kind of work cannot be delayed with advantage. The work of trimming is easier for the workpeople and better for the fences, as the young wood may be cut more closely than when the trimming is deferred until after harvest and the wood become hard. Rape and mustard may still be sown, the former for feeding sheep upon dry healthy land; but upon heavier soils mustard will come quicker, and may eventually be ploughed-in and pressed as manure for the wheat crop, should the weather continue too wet for folding with sheep. Mustard answers a good purpose to fold-off with ewes when the rams are running with them, for we have found that either rape or mustard are well calculated to advance the ewes in condition. This is also an important point at lambing time, for where the ewes drop their lambs well together it proves best in every way for those who have to attend to them. There are various means which may be adopted to lessen the labour at harvest time by anticipating the requirements of the harvest. Should the weather prove adverse faggots may be carried to the field for making staddles to build the ricks upon, and also to have straw drawn in readiness for thatching. It will be more important than usual to have the ricks of corn built in the field, as a given acreage of produce can then be secured against adverse weather in the least time. Especially is it necessary to be provided with sail cloths for covering the ricks if rain occur whilst building or before they are thatched. We approve of building corn ricks round instead of oblong, as taking less thatch to protect them, and as presenting less outside to the weather.

#### POULTRY FARMING.—No. 5.

THE general management of poultry bred for profit on a large scale is a serious matter. We know well from experience that the methodical direction of a number of runs kept for pleasure, and only so far for profit that they are expected to be self-supporting, take much time and attention, far more than is conceivable to those who have not tried it. Where, however, profit is to be the first consideration this attention will have to be the more unremitting. The hints which we shall give for it are, as in our other articles on the subject, taken from a *régime* on a smaller scale. This must be borne in mind as before. There are of course two distinct branches of the occupation—the production of eggs and that of chickens, and anyone who embarks upon it must first make up his mind to which of these he wishes chiefly to devote his attention. A poultry farm, however, on a large scale would hardly deserve the name of such if it did not afford both eggs and chickens. Whether the one branch or the other should take the first place must depend upon the facilities for disposing of the product and on the proximity of markets.

We will first touch upon the production of eggs. It is of course of the highest importance to get the greatest number of these for which there is demand at the time of year when they are dearest, for everyone knows that in January and February fresh eggs fetch three times the prices that they do in July and August. It is also of importance to have a continuous supply of them all the year round, so that they may never fail to satisfy the demand of any regular market. A large portion of them should be produced by non-sitting hens. Some varieties of these certainly lay a greater number of eggs in the year than those of any sitting breeds we know. It is true that they seem to wear out earlier; but this does not matter, for we should never advise keeping old hens in an establishment for profit. They save much time and trouble too, for the constant turning-off of broody hens from their nests and preventing them sitting during the hot months while the desire of incubation frequently recurs is most troublesome. What varieties, then, do we recommend? Hamburgs are unsurpassed for the number of their eggs, but these are too small for market. Polish are good layers, but not sufficiently hardy to be kept in large numbers. We should recommend Houdans, Leghorns, and Minorcas. An intelligent person will discover in two or three years which breed suits the place, the soil and circumstances best, but to begin with we should suggest that these three breeds be tried. Houdans are the hardiest race and the best layers of the French breeds that we have tried; they have the further advantage of being excellent birds for the table, which many of the non-sitting varieties are not. Leghorns and Minorcas are both great layers of very large eggs for their size. They are evidently related and sub-varieties of one race, which we should call the fowl of the Mediterranean. Birds of more or less purity resembling the Leghorns are found throughout Italy, and birds of the Minorcas type throughout the Spanish Peninsula. As producers, however, of eggs in winter these breeds may be surpassed, and as chickens are also to be reared there must be mothers to rear them. It so happens that some of the best sitters and mothers are also the best of winter layers, and consequently the earliest to become broody. The kinds which we should choose as most suitable for this twofold purpose are Brahmans, Cochins, and Dominiques.

Of these from experience we should certainly give the palm to Cochins as winter layers, but some strains of Brahmas come very near them. Dominique we have not tried, but we hear on excellent authority that they are wonderful layers as well as good sitters; the latter merit surprises us, as they are evidently related to Leghorns.

In a large establishment the various breeds should certainly be kept apart, and a strict account kept of the number of hens in each enclosure from day to day and of the number of eggs laid by them, it will then be easy to compare their excellence. Too hasty inferences must not be drawn, but two or three seasons should be taken for these comparisons if there is any idea of rejecting a breed entirely, or of substituting one for another. An observing person who is enthusiastic and sanguine of success should mark particular hens which lay peculiarly early or well, or especially fine eggs; these qualities are almost always transmitted to their progeny, and we are sure that peculiarly profitable races might soon be thus established by the selection of such birds alone for breeding stock. Much time and incessant attention have been given to breeding birds up to great size and weight, or to particular fancy points; but as far as we know no one has as yet taken the slightest pains to get a race improved in such improveable and valuable qualities. For the production of both eggs and chickens we strongly advise that pure-bred birds be alone bought at first; from these we should certainly try various crosses for both ends. But no beginners should try mongrels, it is so seldom possible to trace their ancestry or to calculate upon their particular points of excellence. The different breeds being divided as we advise, those runs occupied by non-sitting hens will of course be required all through the season. Where, however, there are a flock of sitters together we should allow the whole of them to sit; there will then be a spare run either for some of them with their chickens or for other birds, or the ground may be left to freshen up. Such methodical arrangements save much time and space too.

In starting, then, we should divide our stock of laying hens into two classes—the sitters and the non-sitters—about equal in numbers. We should begin with none but pullets, and put about forty into each run of the size we have advised. It would be a question with us whether to give any cocks at all to those hens destined to produce eggs for use alone. We fancy that hens are happier and more contented with them, and so should be inclined to allot a single male bird to each run; of course for breeding purposes this would be next to useless. It would be very desirable to make careful experiments, which we have never had the opportunity of doing, to discover whether the presence of a lord of the harem has any effect upon the number of eggs laid.

We must now come to the other branch of the business to be done—viz., the production of chickens. Of course the arrangements of the breeding birds will be very different; the breeds, too, which we shall recommend are different, for some of the very best laying varieties are not famous as table fowls. As with the layers, we shall only point out a few of the breeds which we have found to be the most excellent for the purpose and crosses of which we approve. The poultry farmer must compare them for himself, weigh the chickens at different ages, and above all discover which are most approved in the markets and consequently fetch the highest prices. Houdans are a handy breed with plump breasts; they develop rapidly, and have the advantage, as we have already said, of being good layers. We recommend them for early broods; the cockerels will come in as spring chickens, while the pullets can be saved for autumn layers. Crevés are not so hardy, but splendid birds and suitable for special fattening-up as capons. Dorkings are of course the table fowl *par excellence*, and cannot be surpassed as such, though the chickens are not quite so easily reared as some kinds. They are (at least good strains of them are) capital layers too, and we should be inclined to add them to our list of egg-producers which sit. Then for crosses Brahma hens with a Dorking cock are useful; they will be among the earliest layers, and their cross-bred produce will stand the most inclement season and grow space, so as to be ready for the earliest spring. All can be killed, or the pullets saved for laying and sitting, for both which purposes they are good.

Some Dorking hens with a Game cock will give a hardy and most palatable race. How are these breeding birds to be arranged? Certainly not like those which are merely egg-producers—viz., in troops of forty. A cock and six hens, or through the summer ten, should occupy the same sized run as the forty layers. This may seem an extravagance and waste of space, but it is not so. Breeding birds require freedom and comfort to ensure strength in their produce. They must be selected with great care, not as to fancy points, but with regard to all the indications of health and vigor—straight legs, bright combs, strong tight plumage, vivacity of demeanour, and, when pains have been taken to ascertain such minutiae, for their individual excellence as layers or mothers. As a rule the cock should be from ten months to twenty months old, the hens from one to two and a half years. From a pen so selected and so separated every egg must be saved. Where hundreds of chickens are to be reared from one such family it is well worth while to take pains to ensure their produce being first-rate.

We are already outrunning the space which we had thought would be sufficient to conclude the subject, and so must reserve a few more hints on general management, which we should be sorry to omit, for one more article.—C.

## VARIETIES.

THE harvest in America is, according to the *Prairie Farmer*, likely to be an unusually bountiful one. In Michigan the yield of wheat is estimated at upwards of 81,000,000 bushels, Indiana between 40,000,000 and 50,000,000 bushels, an unprecedented quantity for that State; Minnesota 45,000,000 bushels, and Illinois 80,000,000 bushels. In the south the prospects are equally good, and a satisfactory yield is anticipated in California. Last year the total American yield of wheat was 420,128,400 bushels, an amount which will be greatly exceeded this year. It has been computed that Europe will need 800,000,000 bushels of wheat for next year's consumption, the share of Great Britain being estimated at 117,000,000 bushels. In consequence of the unsatisfactory prospects of the harvest in Europe it is expected that prices will be well maintained; but it is something to know that there will be bread enough for all.

—NEW VARIETIES OF WHEAT.—We are informed that the Royal Agricultural Society has decided to offer two prizes of £25 and £10 each for new and distinct varieties of wheat which shall combine the largest yield of grain and straw per acre with approved form and size, smooth and thin skin, full and white kernel, and high specific gravity in the seed, and with bright, firm, and stiff straw. One sack must be delivered to the Society by each competitor, together with a sample bundle of straw, before the 1st October next. A portion of each sample will be kept for comparison; and the remainder, divided into equal portions, will be cultivated next year in four localities differing in respect of soil and climate. The prizes will be awarded for the best varieties of the crop of 1880 thus cultivated under the Society's auspices, if in the opinion of the Judges they possess qualities which entitle them to distinction. The produce of the experimental crop of 1880 will be the property of the Society, and will be offered first to the competitors who submitted the seed. The Society also offer prizes of £25 and £10 for new and improved varieties of wheat upon the same conditions as those enumerated before, except that the sample sacks shall be delivered by October, 1882, thus giving time for the development of an uniform and permanent variety.

## HARVESTING HONEY—CLEARING BEES FROM SUPERS AND SECTIONS.

THE year 1879 is likely long to be remembered by bee-keepers as one of the worst we have during several decades experienced in England, and yet where stocks have been kept strong by systematic aid perseveringly given, in some localities at least, during swatches of fine weather supers have been rapidly filled, sealed, and removed in first-rate order. Around London we know from experience that the limes yielded abundantly during the last days of July, and those have not been wholly disappointed who felt that leaving the bees to starve was the worst kind of economy, while feeding after bad days (and this means unhappily almost nightly) was in all probability to be rewarded by returns very much higher than cent. per cent. The results of the year up to the present, as a whole, are sad indeed; but so singularly unequal has been the behaviour of the sky, that districts not far removed from each other tell totally different tales. For the most part where heather is not within reach honey-gathering, except in such small quantities that nothing can be added to supers, may be said to be at an end; clover, even where it has not fallen before the scythe, hardly at this late date making an exception. Where supers have been obtained it is desirable that they should be either removed at once or carefully watched, lest the honey they contain should be carried down by the bees into the stock hive.

In commencing this work of removal the bees always allow those cells that have received their airtight caps of wax to remain intact, deporting at first the unsealed honey only; and as sealing usually proceeds more sluggishly on the outside than the inside combs, we have the advantage in watching there of having under view the very cells likely first to be relieved of their coveted burden. Taking a peep at the bees by raising the jacket, so essential as a heat-preserver, we perhaps note that the unsealed cells at a corner of a comb previously known to be glistening with the nectar, which half filled them, are now empty, and at once determine to appropriate as our rightful share of Nature's bounty that which remains. We are thus brought face to face with the problem which so often prompts the queries—How shall I take my honey? How shall I get the bees out of the supers? In reply to these let me offer a few words of explanation, which I hope will soon show that, at any rate in such a season as this, it is easier to induce the tenants to depart than it has been in most cases to get them to take possession. If the supers have no bottom board it will be necessary to cautiously raise one corner

sufficiently to pass beneath it a very fine wire, the ends of which had better be fastened round sticks of wood to act as handles. This must now be drawn backwards and forwards and beneath the supers to cut, not drag, the comb from its attachments beneath. The separation being effected puffs of smoke should be blown in beneath the super, or preferably between its lid and side, if its construction admit of this. The bees will in considerable numbers retreat below, while those that remain will be of service in lapping up the honey set at liberty by the wire saw. Bar supers may be turned up at once on the hive top so that their combs stand in perpendicular lines, in which position they will sustain no damage, and smoke applied above will quickly send almost every bee rushing downwards to join those they now hear noisily buzzing within the hive (for bees certainly hear, Sir John Lubbock's violin notwithstanding, about which I want to say a word at another time). In this way the young bees are saved that have never flown, and of these a good number is often found above; a dusting brush will whisk off the rest as the super is carried away. I have tried goose wing and thin light brushes for this work, but nothing is comparable to the painter's duster; a bee scarcely ever gets between the hairs of it, while the poor insects are always driven before its gentle violence, and at once completely removed. It must not be used nervously, but the ends of the hairs must be made to pass as rapidly as possible over the combs.

This method will not suit large glass supers, or any in which the weight and irregularity of the combs make it desirable that they should not be tilted, for we must not forget that a super at the time of its removal is warm, and consequently extremely tender. In these cases we may often with great advantage wrap a wet cloth around the whole some hours before the removal is attempted. The falling temperature quickly checks evaporation of new honey and secretion of wax, while the small inter-comb spaces become most uncomfortable quarters for the little labourers, that in consequence decamp almost bodily to the brood nest, where their presence is made necessary as we are cooling down this part of the hive also by our evaporating cloth above. The cooled and therefore toughened super may now be propped up on wedges so as to admit of small quantities of smoke to drive away further detachments of the quasi owners, no great number of which would now remain. A lidless box stood in a shady place having two or three slats of wood lying on the bottom of it will now be of service; on to these the super *in situ* is put while the sides are darkened by a cover; a cloth is thrown over the box to prevent the attentions of robbers, and the bees within coming to the light crawl on to the under side of the cloth, which is turned over at intervals so that the bees within are put outside. My five-pin trap, which is now so generally known that it hardly requires description, often much assists. It may be variously applied, and is made by boring holes  $\frac{1}{2}$ -inch in diameter in wooden slips, and fixing two common dress pins over each hole, and two in like manner beneath, with space in each case for a fifth pin to hang between, held from dropping through by its head resting on the upper pair of pins. The hanging pin stands necessarily over the hole, and while it can be pushed up by a retreating bee prevents any from gaining admission from without. I have used a tray about 2 inches deep with five or six of these traps on its side for some years. The super rests upon its—i.e., the tray's edges, so that the only egress is through the trap, and without further trouble is cleared completely in a few hours.

I see in the "British Bee Journal" a new bee trap announced. "We are indebted to Mr. B. W. T. Braddy of Kelvedon, Essex," says the Editor, "for a suggestion which will be valuable to those who have supers to empty of their bees. It is no more or less than a tube of perforated zinc 6 inches long, inserted into the super, through which the bees may escape. The tube sticks out of the super, and the bees after passing through it do not attempt to return by the same route, but cling round its point of insertion into the super. It is described as most effective, and its inventor has such confidence in it that he leaves his supers or nadirs for whole days, feeling assured that no bee will gain re-admittance. The suggestion is valuable, and experiments made here long since quite corroborate what is said of it. But it is a mistake to suppose this form of trap to be new. Those who have the 'Handy Book of Bees' will see that Mr. Pettigrew at page 4 says, 'Some twenty-five years ago we caused a hive to rear a queen in the month of September after all its drones had been killed.' This was done with a view to ascertain how many days she left her hive to find a companion. The mouth of the hive was shut, so that every bee going out had to pass through a narrow tube projecting 2 or 3 inches before it took wing. Though the way out was plain and easy neither the queen nor bees ever found their way back through the tube."

But to return. The removal of sections, now growing happily so common amongst English bee-keepers, is far easier work than the removal of supers. I usually manage as below, losing scarcely a bee during the operation. The sections being opened a puff or two of smoke will expose a sufficient surface of comb to enable one to determine at once which boxes are fit for appropriation. These are raised, the bees on their under sides whisked off with the before mentioned duster and placed in a tray at hand. The plundering over, a cloth is thrown over the sections,

when new boxes are added or the remaining ones drawn together as the case may be, and the hive above made snug. The sections of uncomb will hardly need further attention, but should many bees be clinging about them they are brought singly to the hive door and one corner placed on the alighting board. The hum within attracts, and the smoke again applied drives towards the entrance, and in a few seconds we are left in undisturbed possession, for the two or three inevitable stragglers may be dislodged by a puff from the lips when the work is done. That circumstances after cases will be always true, and where intelligence rules rather than routine, plans will never be stereotyped, but these suggestions will I hope enable the amateur to shape his course so as to secure his honey with little loss of time or bees.—F. CHESHIRE, *Avenue House, Acton, W.*

## OUR LETTER BOX.

**CONDEMNED BEES (E. C. Surrey).**—You can work two or three stocks of condemned bees into a strong colony. Having put them together feed them constantly until they have made 20 lbs. or better 25 lbs. in weight, in addition to their hive. Foundations are an advantage, but simple guides will be sufficient in the frame hive, and these indeed, since you have little experience, will be less likely to give you difficulties. Old comb is not necessary nor even desirable, as condemned bees usually build all worker cells. The wax for these combs, as you probably know, will be developed from the syrup given them. We hesitate to recommend hives, but the one mentioned in our last issue as receiving the prize at Birmingham will probably suit you.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Barom. reduced to 32° F.	Hygrom- eter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1879.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
August										
We. 13	29.834	67.3	62.4	S.E.	61.7	78.2	55.6	19.9	51.5	0.010
Th. 14	30.024	68.2	61.9	N.W.	61.3	76.9	58.6	18.1	54.6	—
Fri. 15	29.949	66.6	63.0	E.	62.3	78.3	59.2	17.2	54.9	0.040
Sat. 16	29.655	61.0	57.4	S.E.	62.7	71.7	56.3	16.7	54.6	0.300
Sun 17	29.501	52.3	52.3	N.W.	62.1	62.4	50.1	67.1	49.2	0.707
Mo. 18	29.698	56.0	53.7	W.	58.6	60.9	51.8	122.0	52.0	—
Tu. 19	29.831	58.8	56.9	S.W.	58.8	63.0	52.9	78.4	47.1	0.284
Means	29.781	61.5	58.3		60.9	71.8	54.9	106.8	52.3	1.881

## REMARKS.

- 13th.—Very close, calm cloudy day; slight rain 10 P.M.  
 14th.—Fine bright hot morning; overcast at 1 P.M. till 3 P.M.; calm fine evening.  
 15th.—Dull in early morning, afterwards fine bright day.  
 16th.—Showery morning; fine afternoon and evening; starlight night.  
 17th.—Dull morning; rain commenced at 7.30 A.M. and continued, with squally wind, the whole day; for a short time at 5.30 P.M. the sky became clearer; in the evening the rain was slighter, but heavy again at 10 P.M.  
 18th.—Rain in early morning; rest of the day fine, bright, and cool.  
 19th.—White mist in morning; very dull gloomy day, with rain, which increased during the after part of the day, and became heavy at night.  
 Early part of the week fine and warm, latter part excessively wet.—G. J. SYMONS.

## COVENT GARDEN MARKET.—AUGUST 20.

WE are now at the finish of the soft fruit, and prices for what samples are coming have much improved. Hothouse goods are in fair demand owing to the short supply of outdoor fruit. Trade better.

## FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	0	0 to 0	Melons.....	each	3	0 to 5	0
Apricots.....	dozen	2	0	0	Nectarines ..	dozen	3	0	0
Cherries.....	box	0	6	10	Oranges .....	½	100	4	0 to 12
Chestnuts.....	bushel	12	0	10	Peaches .....	dozen	0	0	0
Currants.....	½ sieve	3	6	4	Pears, kitchen	dozen	0	0	0
Black .....	½ sieve	4	6	6	dessert.....	dozen	0	0	0
Figs .....	dozen	8	0	0	Pine Apples ..	½ lb	2	0	4
Filberts .....	½ lb.	0	9	10	Plums .....	½ sieve	0	0	0
Cobs .....	½ lb	0	9	10	Raspberries ..	½ lb.	0	8	0
Gooseberries..	½ sieve	2	3	6	Strawberries..	½ lb.	0	6	10
Grapes, hothouse	½ lb	1	3	4	Walnuts .....	bushel	0	0	0
Lemons .....	½ 100	4	0	8	ditto .....	½ 100	0	0	0

## VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	3	0 to 4	0	Mushrooms ..	pottle	2	0 to 2	0
Asparagus.....	bushel	0	0	0	Mustard & Cress	bushel	2	0	0
Beans, Kidney ..	½ 100	1	0	10	Onions .....	bushel	3	6	4
Beet, Red.....	dozen	1	0	20	Pickling .....	quart	4	0	0
Broccoli.....	bundle	0	0	16	Parsley..... doz.	bunches	3	6	0
Brussels Sprouts	½ sieve	0	0	0	Parsnips .....	dozen	0	0	0
Cabbage .....	dozen	1	0	20	Peas .....	quart	0	9	10
Carrots .....	bunch	0	4	8	Potatoes .....	bushel	3	6	4
Cauliflower.....	½ 100	1	6	20	Kidney .....	bushel	0	0	0
Calliflowers ..	dozen	3	6	0	Radishes..... doz.	bunches	0	0	0
Celery .....	bundle	1	6	20	Rhubarb.....	bundle	0	0	0
Coleworts..... doz.	bunches	2	4	0	Salsafy.....	bundle	0	9	16
Cucumbers.....	each	0	4	10	Scorzonera.....	bundle	1	0	0
Endive .....	dozen	1	0	20	Seakale .....	basket	0	0	0
Fennel .....	bunch	0	8	0	Shallots .....	½ lb	0	0	0
Garlic .....	½ lb.	0	6	0	Spinach .....	bushel	3	6	4
Herbs .....	bunch	0	2	0	Turnips .....	bunch	0	6	0
Leeks.....	bunch	0	2	0					



## WEEKLY CALENDAR.

Day of Month	Day of Week	AUG. 28—SEPT. 2, 1879.	Average Temperature near London.			Sun. Rises.	Sun. Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.	
28	TH	Crystal Palace Fruit Show opens. Walsfield Horticultural Exhibition.	73.7	49.7	61.2	5 7	6 55	5 27	0 45	11	1 11	240
29	F		71.3	47.6	59.4	5 9	6 53	5 50	2 5	12	0 53	241
30	S	13 SUNDAY AFTER TRINITY.	74.5	48.2	61.3	5 10	6 51	6 8	3 25	13	0 35	242
31	SUN		71.5	47.4	59.3	5 12	6 48	6 24	4 43	0	0 16	243
1	M	Glasgow Horticultural Exhibition.	71.1	47.5	59.3	5 14	6 46	6 28	5 58	15	0 2	244
2	TU		71.0	47.6	59.4	5 15	6 44	6 52	7 11	16	0 21	245
3	W		71.8	47.7	59.2	5 17	6 42	7 6	8 22	17	0 40	246
From observations taken near London during forty-three years, the average day temperature of the week is 71.9°; and its night temperature 47.9°.												

## SOME LESSONS OF THE YEAR.

**G**LOOMY, cold, and wet have been the days, weeks, and months of the summer that is now swiftly drawing to a close. Bright sunshine has become so great a rarity that a sunny day is now regarded as an event to be talked about and treasured in the memory. Weeds rampant, fruit flavourless, vegetable dwarfs become vegetable giants; snails, slugs, and insects generally so abundant that birds hardly touch the fruit. An abnormal season of so pronounced a type that its effects upon vegetation for good or evil are everywhere visible in so clear and unmistakable a manner as to afford us a valuable insight into the cause of many a failure—aye, and of many a success also.

Nor does this valuable experience constitute all the silver lining of the cloud, for some of us at any rate can point to a very bright and pleasant contrast to the gloom. Ask the rosonian, and he will tell you that never have his Roses been better in size, form, colour, and abundance; the fruit-grower, whose Grape Vines are planted in shallow well-drained borders, can point to a heavy crop of fruit of largest size and richest colour; the flower gardener to foliage of wonderful vigour and freshness among the numerous tropical plants grown during the summer months in many a sheltered spot in the open air; the vegetable grower, after a faint grumble about weeds and a louder one about Potato disease, must acknowledge a bountiful supply of succulent vegetables, his chief difficulty having been to confine the rampant growth within due bounds; and the forester has such vigorous growth in all his shrubs and trees that more than atones for the ravages of the severe cold of last winter.

Thus much of this remarkable season generally. Now let us turn our attention somewhat more closely to certain details. Shanking and mildew will no doubt be prevalent among the fruit of Vines growing in deep ill-drained borders; the crop from Vines growing in shallow soil thoroughly drained is, on the contrary, better than usual, the abundant fruit being remarkable for its size and colour, thus serving to enforce advice often given in these pages and of such great importance that it cannot be repeated too frequently—Keep the roots from contact with a cold sodden subsoil by means of an impenetrable concrete mass of lime and rubble; make the soil as rich as you would for the growth of vegetables, mixing enough of hard or gritty matter among it to afford a quick passage for water after it becomes compact; it should not be deeper than 2 feet, and have sufficient 2-inch drain-pipes beneath it to carry off all superfluous moisture. Such a border ought never to have any digging or disturbance of any kind, an annual top-dressing of rich manure and abundant waterings in a dry summer being all that are necessary. How abundant and frequent such waterings should be the present summer has shown unmistakably.

Cherries, Apples, and Plums after blooming profusely shed the embryo fruit so much that with but few exceptions

the crop is a failure. Cold and wet was the cause; and I may usefully note that of Apples which have withstood the baneful effects of this untimely weather and have a fair crop of fruit, there are Keswick Codlin, Nelson's Codlin, New Hawthornden, Cellini, Duchess of Oldenburg, Warner's King, Small's Admirable, Northern Greening, Yorkshire Greening, and Bedfordshire Foundling, all sorts of proved merit, and which it is satisfactory to know are to be found in most gardens. Of Plums, Coe's Golden Drop, Victoria, and Cluster Damson are the only varieties with a crop of fruit among some thirty others. Pears generally upon walls irrespective of aspect have so good a crop that it could serve no useful purpose to enumerate them.

Soil left undrained or badly cultivated has been in lamentable plight. Here Nature has enforced our teaching in a stern and unmistakable manner. Drainage and mechanical division are two prime factors in the reclamation of soils of a cold, heavy, or very adhesive nature, and are to be regarded as equally necessary, for drainage alone is clearly insufficient. For example, some six years ago a piece of land consisting chiefly of silica very finely divided and with a small proportion of clay was drained, trenched, and enriched with manure and planted with Gooseberry bushes, and subsequently hoed to keep down weeds, an annual surface-dressing of manure being employed; but no digging was done, nor was the soil disturbed in any way, the roots having spread and become interlaced. All went well till the present summer, which promised to be one of the most productive of seasons so far as these bushes were concerned, all of them having a full crop of fruit, yet quite two-thirds of them have died outright, owing to the soil having gradually assumed its original condition and become waterlogged, which never could have happened had there been a plentiful admixture of coal ashes or similar hard substance when it was trenched.—EDWARD LUCKHURST.

## ROSES FOR TOWNS.

I SEE that on page 136 "A BEGINNER" asks advice as to the Roses most suitable for a smoky district. May I, as an amateur who has learnt what he knows of Roses chiefly from the valuable articles that appear from time to time in the *Journal of Horticulture*, supplement the advice you give him by a few remarks? My experience has been gained entirely in a smoky district, and some of it has been of a bitter nature; but if under adverse circumstances the difficulty of growing the queen of flowers is increased, how infinitely greater is the triumph and the satisfaction when a few good blooms are produced! Of all men the Rose-grower must be one who works in earnest and is not easily discouraged, and this is especially so with the town Rose-grower.

In the list of Roses you have suggested to "A BEGINNER" you have omitted one which of all others I have found to resist the evil influence of smoke and to repay for trouble expended upon it—I mean *Marquise de Castellane*. This Rose may possibly not be so vigorous a grower as some others, but I find no blight upon it; it also blooms freely and thrives in an air which to very many others proves fatal. I wish

the growers of Roses near large towns would give us their experience more than they do; I for one am very grateful to "WYLD SAVAGE" and others for the advice they give us from time to time, but what I so often feel is that I want the advice of a man who has to combat with the same difficulties as I have to meet—impure air, the difficulties of obtaining manure, and the hundred and one other enemies which make it impossible for the town grower to have every and any Rose he likes in his collection. I am sure there are many in this position.

One or two other Roses I would recommend are Jules Margottin, Madame de Cambacères, Elizabeth Vigneron, Mrs. Bosanquet, and Cheshunt Hybrid. Of Charles Lefebvre I am suspicious, and with La France and Madame Victor Verdier I have not been successful—perhaps my own fault. Of the Roses which you mention in reply to "A BEGINNER" I have found Céline Forestier answer well, and next to Marquise de Castellane John Hopper seems the best, but how terribly he blights, and what constant attention he requires to keep away the caterpillars, which seem perfectly in love with him. Is this the experience of the giants who live in pure air (Devonshire, for instance), and can grow as many and what Roses they choose?

Of Tea Roses, in addition to Gloire de Dijon I would suggest Homère grown as a standard, not as a dwarf. And now what will be said of me if I say everything that is bad of Général Jacqueminot? Shall I bring down derision on my devoted head, or will any of the "town men" agree with me? Speaking from my own experience—and I know I am not quite alone—I say unhesitatingly that for growing near towns and in smoky districts the Général is useless. Will others give us their opinions on this point? To return to the Teas, will anyone tell me why my Gloire de Dijons refuse to bloom? They grow well and keep very clean, but until the end of the season they do not bloom. A nurseryman I complained to recently advised my leaving them entirely alone at the pruning season. I mean to try it.

One suggestion I must not omit for "A BEGINNER." This is to employ liquid manure. I believe the life of every town-grown Rose tree is necessarily short, we must therefore make it a merry one. Very few if any Roses can be grown even in comparatively impure air for more than, say, three years, but with judicious treatment they will do well for that time. Liquid manure is the best tonic, and it can easily be made. Nothing can be simpler than the following plan, for which I am indebted to the Journal. Procure an old cask; insert a tap about 2 inches from the bottom; about a foot above the tap fix a false bottom of perforated zinc and throw in some dung; fill up with rain water, and as you draw off the liquid manure keep filling up with water until all the goodness is extracted from the dung. Of course other ingredients may be added with advantage—soot for instance, which intensifies the colour of the foliage and blooms and is a good stimulant, each Rose-grower having faith in his own peculiar brew.

I should like on another occasion to say a few words about the stocks best suited to towns.—BICEPS.

[You certainly may do so; such practical notes as you can send are highly useful.—EDS.]

### PRUNING AND CLEANING VINES.

THE season will soon be at hand for pruning and cleaning early and successional Vines, which is work of much importance. The scraping which some Vines undergo leaves them bare of their natural covering, and does far more harm than good, as the exposure to which the inner bark is subjected causes it to become hard and contracted, which greatly impedes the growth and swelling of the rod. Were it not for the harbour the old bark affords insects there would be no necessity for removing it, and to hasten Nature in any of her operations is not a wise proceeding. In preference to stripping the rods bare, the best way is simply to remove any ragged portion of the bark that may be hanging or that will rub off by passing the hand round the stem; by so doing the buds forming around the spurs are left uninjured, which is an important point in the management of Vines. For instance, when the spur system of pruning is adopted it is necessary to prune back old spurs, therefore any dormant buds on the main stem should always be preserved. In the case of old spurs 6 to 9 inches long they are not only unsightly objects, but are always knotted and gnarled, and greatly impede the flow of sap, as may be seen by the weak way in which the eyes break.

Pruning is an operation that in most gardens is deferred much too long. When Vines are pruned late not only are they liable to bleed, which has a most weakening effect, but the buds at the base of the shoots are never so large and plump and so fully developed as those higher up the laterals, the tendency of sap being to flow to the extreme points; therefore the sooner it can be concentrated in those buds below intended for the following season, after the foliage is ripe and of no further service, the better and brighter are our prospects.

Because we see Vines without foliage and apparently dormant we must not conclude that there is no circulation of sap, as that to some extent goes on continually. By pruning early what little there is then in motion is confined to narrower limits, thus filling and plumping up all buds that are left. Vines on which Grapes are kept hanging are often greatly injured by late pruning, as not only are the Grapes taking a great quantity of sap to keep them plump, but there is likewise much expended on the numerous shoots and buds they contain. Happily the present system of placing Grapes in bottles sets Vines at liberty much sooner than they used to be.

A practice we adopt, and one which we strongly recommend in the case of late Grapes, is during the month of November to prune back all shoots from which the fruit has been removed and those that are not carrying fruit. We find that by adopting this system we have half the house pruned when bottling time arrives, while the increased amount of light and air admitted acts very favourably, the flavour of the fruit being greatly improved.

Vines pruned early start early with much less forcing than would be required otherwise. It is of great importance to help them on in this way instead of incurring loss of time and having to apply extra artificial heat to make up for the delay. When, from unavoidable circumstances, pruning has to be performed late, the ends of the cut parts should immediately be dressed with a styptic, otherwise it is next to impossible to stop bleeding when once it commences; so great is the force of sap and so continuous the flow, that the part is never dry long enough to allow anything to stick on it. At this season all insects that may be lurking in the cracks of the bark of Vines may be readily destroyed. We have found nothing so safe and effectual as a mixture made as follows:—4 ozs. of sulphur, with the same amount of tobacco juice and Fowler's insecticide added to a gallon of hot water, with sufficient stiff clay to give it the consistency of thick paint. This, carefully painted on the rods, will not only kill thrips and red spider, but their eggs, and the spores of mildew likewise. Previously to painting the rods with the mixture above named the house should receive a thorough cleansing, and the benefits derived from clean glass cannot be overrated.—J. LLOYD JONES.

### WHITE FLOWERS.

ALLOW me to thank Mr. R. D. Taylor for his most valuable and interesting letters which have appeared from time to time in the Journal under the title "Twelve Hardy Herbaceous Plants of the Month." I have taken note of most of his selections, and wherever I find I have the plants he names my experience exactly coincides with his. If I may be so bold as to give a hint to so august a person as the Editor of the "Year Book," I would recommend him to print these lists under the various months. It is always a matter of difficulty referring to back numbers of the Journal, and unless these are bound they are often lost. The election of Roses which has from time to time appeared in the Journal has been reprinted in the "Year Book," and has proved most valuable.

I wish to say a few words upon a subject which I believe will prove interesting to at least one section of your readers. I allude to the clergy and those ladies who devote themselves to the task of decorating our churches at the various festivals, and also arranging the altar vases. The subject I allude to is that of white flowers. Now, I think it will be granted that good white flowers are rarer than those of any colour, particularly in the earlier half of the year, during which all the festivals of the Church occur. I do not of course allude to stove and greenhouse plants. I am aware that the flowers of *Eucharis amazonica*, *Stephanotis floribunda*, and *Azaleas* are white, also forced Lilies, a number of Camellias, *Azaleas*, *Ericas*, &c.; but many of us have no hothouses, or if we had could not afford to go to the expense necessary to grow such plants as these, still less are we able to buy Camellias at 1s. 6d. a blossom, Orchids at 2s. 6d.,

and other choice flowers in like proportion. I want to say a few words about a few useful garden plants which bear white flowers, taking them in the rotation of their blooming. But here I must confess my list is very small, and no doubt very many of your readers could add to it, but I shall give the name of no flower that I have not proved here and elsewhere.

The first of all to bloom is *Helleborus niger*, the common Christmas Rose, which is the whitest of the genus. This is followed by the Snowdrop. After that we have the white forms of Daffodils, the best of which are Bicolor Empress, Horsfieldi, moechatus, and cernuus, which may be called sulphur white. The Hyacinths come next; but for altar vases they are too stiff, as indeed is *Narcissus poeticus*, which follows the Daffodils. We are now in March. When April comes we have the glorious Iris; Florentina and Albicans are the best of the Germanica barbata section. After these the English and Spanish Iris afford us splendid blooms of white flowers. At this time there are various herbaceous plants in bloom, one of the best is *Galega officinalis*. Now come the Tea and Noisette Roses, the earliest of which are Lamarque, Climbing Devonensis, and Solfaterre. As soon as the Irises are over Liliiums are in, and perhaps the best of all for decorative purposes is the common white Lily, *Lilium candidum*. Whilst these are still in full flower the Gladioli come in, and no flowers are more useful for vases than these fine spikes. Next we have the Amaryllises and Phloxes. The best of the white Phloxes is La Perle, which has very large petals pure white in colour. Lady Napier is also a very good white variety, and many others which I could name. Some of the Pentstemons, such as Atalanta, are also very valuable. Then there are the white Dahlias, and that lovely Anemone Honorine Jobert. Last to bloom are the white Chrysanthemums, which remain with us till the frost kills both leaf and flower, and long before they are over the mind is looking forward to and the eye examining the plants of Hellebores, which will soon commence the round once more.

These are only a few of the valuable plants which furnish us with white flowers, but I could extend the list very much. I have said nothing of the white Rocket (*Hesperis*) or Campanulas, or white Violets, or numbers of herbaceous plants. I have simply tried to give a list of white flowers which grow freely and bloom profusely throughout the year. Anyone who likes to add to the list will be welcomed by none more warmly than by—WYLD SAVAGE.

#### EXHIBITING VEGETABLES—SCHEDULES.

In perusing that useful and instructive portion of the *Journal of Horticulture*, the correspondence column, in which such accurate information is given to your numerous inquirers, I noticed in the last number a reply to a correspondent who was evidently perplexed by the wording of a schedule. He is one of many who have been similarly puzzled, and it is a subject which should receive some attention from the committees and secretaries of horticultural societies, as the terms ordinarily employed in specifying what shall and what shall not be exhibited are not always sufficiently definite and precise. This use of ambiguous terms, or such as are not clearly understood, leads to much unpleasantness, and many exhibitors think themselves unfairly dealt with on finding that they have been disqualified through non-compliance with the conditions stated in the schedule, whereas had these conditions been clearly expressed no such difficulty would have arisen.

In the classes devoted to plants there is comparatively little difficulty, as the terms "variety" and "species" are usually sufficient for the purpose of restricting the exhibits; but these terms are inapplicable to vegetables where prizes are offered for collections, and so another term "kind" is introduced, and a very unsatisfactory word it is, although like many other ambiguous words it appears at first glance to possess a definite meaning. "Kind" has really a generic and specific signification, and therefore when it is stated in a schedule that a certain number of "distinct kinds" are to be staged, it is optional for the exhibitor to send the products of plants that belong to different genera or different species, but varieties of the same species would be excluded. For instance, in strict accordance with the wording of the schedule Cabbages and Cauliflowers must not be included in one collection, because they are both varieties of *Brassica oleracea*. The term "distinct varieties" will not do, because any number of dishes of different varieties of Peas, Potatoes, &c., might be exhibited, and that is not what is desired.

It appears to me that all these difficulties may be removed by simply using the word "vegetable," which could not be easily misunderstood, and would answer all that is required. In a class for a collection of say "eight distinct vegetables," no one would think of showing two dishes of Potatoes or Peas, nor would Cabbages, Cauliflowers, &c., be excluded from the collection. The plan may be open to objection, but that it would prove extremely advantageous is the opinion of—A JUDGE.

#### GLAMORGANSHIRE HORTICULTURAL SOCIETY'S SHOW.

THE seventeenth annual Exhibition of this prosperous and well conducted Society was held in the park adjoining the Marquis of Bute's garden at Cardiff Castle on August 20th. By many competent judges the Show of this Society is considered one of the foremost in the provinces. In many respects the Society is particularly fortunate. The Hon. Sec., E. Payne, Esq., with his persevering energy is well fitted to conduct the Society, and the gentlemen who annually act as Judges—Mr. W. Coleman, Eastnor; Mr. Parker, Tooting; Mr. Rogers, Battersea Park; and Mr. Austin, late gardener at Ashton Court, Bristol—are so well known that exhibitors always accept their awards with confidence. Notwithstanding the unfavourable season, the exhibits as a rule were quite equal in quality to those of former years. The products were arranged in eight large tents, the one containing the principal plants being the most attractive.

Mr. James Cypher, Cheltenham, secured the first prize for the finest group of stove and greenhouse plants, Mr. E. Pilgrim, also of Cheltenham, being second; both exhibited plants well known to all frequenters of flower shows. In several other classes for fine-foliated plants these two exhibitors divided the prizes between them; but in hardy Ferns Mr. E. Fowler, Pontypool, was a good first, and Mr. Pilgrim second; and in like manner Mr. C. Luard fairly surpassed the latter with eight exotic Ferns. Fuchsias were fairly well shown from the garden of Lieut.-Col. Hill, Llandaff; and by Mr. William Treseeder, nurseryman, Cardiff, who had also some finely bloomed specimen Pelargoniums. The above were included in the nurserymen's section. Amongst the amateurs' plants Mr. Pilgrim was only third with six fine-foliated plants; Lord Tredegar's gardener from Newport, Monmouthshire, being first, and Mr. C. Luard second. For the six exotic Ferns in this section Lord Tredegar's gardener was a good first; Mr. Andrew Pettigrew, gardener to Lord Bute, Cardiff, second; and Mr. G. Thomas a close third. Fuchsias, Coleuses, Pelargoniums, Petunias, Balsams, &c., were well shown by Mr. C. Luard, Llandaff; Mr. J. Watson, Mr. Taylor, Mr. Thompson, Preswylfa, and others.

Amongst cut flowers Roses were, although almost out of season, shown in surprisingly fine condition by several exhibitors. For eighteen varieties Messrs. Cranston & Co., King's Acre Nurseries, Hereford, were first with large finely-formed blooms. Messrs. Davidson & Co., Hereford, were second; and Mr. Earle, Newport, third, both collections being little inferior to the first. For twelve Tea Roses, three blooms of each, Messrs. Davidson & Co. were first. For the special Rose prizes offered by Mr. Stephen Treseeder, nurseryman, Cardiff, some very fine collections were exhibited, and the Judges had considerable difficulty in deciding whether to place Mr. A. Pettigrew or Mr. Crossling first for the eighteen dissimilar blooms, the ultimate decision being as their names now stand. For twelve varieties of Roses Lord Tredegar was first, Col. Hill, second, and Mr. Pettigrew third. For six Tea Roses Mr. Crossling was an easy first, Lord Tredegar rather a poor second, and Mrs. Pride, who, considering the extent of her exhibits and the size of her garden, must adopt an excellent system of seasonal cropping, third. Other cut flowers were well shown by Mr. Crossling, Lord Tredegar, Mr. Tout, and many others. The competition in table decorations was strong and formed quite a feature in the Show; Mrs. Heard, St. Andrew's Crescent, Cardiff, being first for a gracefully arranged table not too crowded with flowers, a feature which spoils the effect of so many dinner-table decorations.

The fruit and vegetables in the gardeners' classes filled one spacious tent, and taken as a whole the contents were of a very creditable description. Pine Apples were more numerous shown than we have seen them at Cardiff for many years. For three varieties Mr. James Harris, gardener to Mrs. Vivian, Singleton, Swansea, was an easy first with a Smooth Cayenne, Queen, and Black Jamaica, all splendid fruit in fine condition. Several good fruits in the single Queen class were slightly over-ripe, consequently the prizes went to those of rather a small size but fresh. Lord Tredegar was first, and Mr. D. Morris second. In the class for any other variety Mr. C. Luard was first with a splendid Smooth Cayenne, and Mr. Pettigrew second with a small Globe. Muscat Grapes were wanting in high finish, still some very fair bunches were shown, Mr. R. F. Gower, Bancestle, first; Mr. Vincent, Peniarth, second; and Mr. G. Jones, Maindee Park, Newport, third. For three bunches of any other white Grape Mr. Pettigrew was first with three large bunches of Foster's White Seedling

Mr. James Lewis second with the same variety, and Mr. Crossling third with Buckland Sweetwater, fine in berry and colour. For three bunches of Black Hamburgh Mr. R. F. Gower was first with good bunches, and Mr. J. Muir, gardener to C. R. M. Talbot, Esq., M.P., Margam Park, second, with three bunches not more than three-quarters of a pound each, but faultless in colour and bloom. According to a note attached to them they had been ripened without fire heat. For three bunches any other sort of Black Grape Lord Tredegar was first with fine clusters of Madresfield Court, Mr. Lewis being a close second with the same variety. For a collection of Grapes the prize was given to the only lot shown by Mr. Pettigrew, none of his half dozen varieties or so being ripe. Melons were excellent, Mr. Crossling, Mr. Pettigrew, and Mr. F. Case, Cardiff, taking the principal prizes. Collections of fruit were poor, and so were most of the small dishes.

**VEGETABLES.**—For a collection of nine varieties seven good lots were staged, Mr. J. Muir being first with a collection in which Veitch's Autumn Giant Cauliflower, Sutton's Reading Onion, Carter's Challenger Pea, Turner's White Calary, and several other dishes were of much merit. Mr. Crossling, St. Fagan's Castle, was a close second, his Tomatoes being especially fine; Onions were not so fine as we have seen them, the first prize going to Mr. J. Muir for a dish of Webb's Banbury, spring sown, of fair size and good shape. Other single dishes of vegetables were well represented. Carter's new Telephone Pea from Mr. J. Muir secured the first prize amongst the hundred pods, and judging from its appearance as seen here we should say it is a Pea of much value, and one likely to be largely grown in future. Carter's new Leviathan Broad Bean from the same grower was also a most attractive first-prize dish, the pods being of enormous size. Cucumbers were largely shown, many being notable for size more than quality. The first prize was awarded to Mr. J. Muir for a handsome brace of Telegraph. Potatoes were extremely fine and numerous, and the principal prizes were nearly equally divided between Mr. J. Muir and Mr. Crossling.

In many instances the cottagers' productions were little inferior to those of the practical gardeners. The Show is mostly supported by the principal gardeners in the counties of Glamorgan and Monmouth, and a few of the principal prizetakers may be summarized as follows:—Mr. Crossling seven firsts, twelve seconds, one third; Lord Tredegar nine firsts, five seconds; Mr. J. Muir nine firsts, two seconds; Mr. A. Pettigrew five firsts, three seconds, one third; Mr. Hawkins, Swenny Priory, three firsts, three seconds.—A. R.

### SUMMER PRUNING FRUIT TREES.

"A NORTHERN GARDENER" rather begs the question when he accuses me on page 81 of crippling my young trees three years planted. I alluded on page 67 to trees on walls and espaliers, and if "A NORTHERN GARDENER" will come and see them he will find that, instead of being crippled, they already nearly fill the whole space I have allotted to them. I encourage growth the first two years, but at the same time prune and train. All my trees are filled now with fruit buds for another year, and the fruit they are bearing only helps to discourage too much sappy wood growth. I quite agree, as "A NORTHERN GARDENER" knows, with the necessity for careful and constant summer pruning. I certainly have the advantage of light soil and pure sand foundation underneath. I leave the roots of my trees to themselves, and they always make plenty of growth, but to secure fruit it is necessary to summer-prune. I cannot quite accept the statement about the necessity of wood being so much ripened by light and air. I do not cut away the interior of trees very much, but leave them close for protection of the blossom in early spring, and yet I get fruit quite into the centre of trees, even of those which have been in bearing for ten or twelve years and others for twenty years. Old orchard trees unpruned have to a great extent finished their growth, and the very fact of their bearing encourages the continuance of it. Still, overcrowded quarters of unpruned fruit and also large orchard trees not properly attended to are apt to have but a slender crop of fruit, and there I quite agree with "A NORTHERN GARDENER." All summer pruning should be done with a pair of scissors. I can prune two trees with scissors while your correspondent prunes one with a knife, and young shoots are often injured at the base by being pulled in cutting with a blunt knife; so that I think a knife and saw rarely requisite.—C. P. PEACH.

**BONAPARTEA JUNCEA.**—There is at present in the stove at Sea Park, Morayshire, a large specimen of this old-fashioned Peruvian plant in full flower. As I have only heard of it being twice flowered before in this county I thought it worthy of record. The plant is growing in a 15-inch pot. The soil

used is loam with some brickdust. The stem of the plant is about 2 feet in circumference, from which spring the rush-like leaves, averaging 22 inches. The flower stem rises to a height of 10½ feet; of that 7 feet are furnished with flowers of a greenish white about the size of a single Hyacinth. The stamens are twice the length of the flower. There are upwards of five hundred flowers on the plant.—W. M. MACKIE.

### TWELVE HARDY HERBACEOUS PLANTS OF THE MONTH—AUGUST.

ALTHOUGH there is a marked falling-off in freshness and colour during this month, yet with well-assorted collections there is no want of bloom to make the herbaceous borders still very attractive. Amongst these contributing most notably to this end may be given the following twelve:—

*Acena novae-zelandiae* (the Rosy-spined Acena).—This is a low-creeping evergreen plant, seldom grown in herbaceous borders, but well known as really good for rockwork. It throws out long prostrate stems, which root as they grow, and which quickly carpet the ground with a mass of small brownish-coloured and delicately cut leaves. The little flowers—not unlike those of the *Adoxa moschatellina*—are of a dusky brown colour, and are hardly visible at the distance of a few yards, until in autumn the shoots are covered with long rosy-crimson spines, when the highly ornamental character of the plant becomes apparent. It is very suitable for carpeting beds on which plants of a striking appearance are thinly planted, as it never rises more than 1 or 2 inches high. Easily propagated by division during summer.

*Punkia grandiflora* (*subcordata*), the Large-flowered Punkia.—One of the best of the genus, bearing large funnel-shaped flowers, milky white and most delicately scented. The glistering leaves are heart-shaped and pointed, and in them the rather peculiar venation of the Punkias is very strikingly shown. The flower stems rise 12 to 20 inches, and the whole plant forms a compact round mass, which is very attractive when not in a crowded border. Though perfectly hardy it grows and blooms best in a warm situation and in light loamy soil. A native of Japan.

*Gnathochloa macrocarpa* (the Large-fruited Evening Primrose).—This was figured and described in the Journal (page 371, vol. XXV.). It is a decumbent species, with very large yellow flowers 3 to 4 inches across. An excellent plant for rockwork, never showing to greater advantage than when half drooping over a rocky ledge. Propagated by seed, which is easily obtained, though it does not ripen plentifully in this country. Layers root freely during summer, though cuttings do not. A native of North America.

*Tradescantia virginica* (the Virginian Spiderwort).—The Tradescantias constitute a genus of curious plants. They were so named in honour of John Tradescant, a Dutchman, who in the first half of the seventeenth century was gardener to Charles I. He was father of the still more celebrated Tradescant who founded the Ashmolean Museum. Whether or not this species was introduced by either of these is uncertain, but it was long known as Tradescant's Spiderwort, and is one of the oldest and best known herbaceous plants we have. It has narrow sedge-like leaves and branching flower stems, which bear umbels of deep violet-blue flowers with yellow anthers. It grows upwards of 2 feet in deep moist soil, and continues in flower nearly three months. There are a number of varieties—white with blue anthers, lilac-rose, and pale red. Native of Virginia, where it is called Spiderwort from its supposed virtues as an antidote to the bite of poisonous spiders. Its petals macerated in water make a beautiful violet-mauve ink. Propagated by division in spring.

*Achillea Ptarmica* fl. pl. (Double Sneezewort).—The single form is a native plant of no great beauty, but this is worth a place in any collection. It has numerous erect stems about 2 feet high, clothed with narrow serrated leaves and surmounted by dense corymbs of pure white very double flowers. These are valuable for cutting, though their somewhat strong odour is sometimes objected to. Propagated by division.

*Eryngium amethystinum* (the Blue Eryngium).—The Eryngiums, represented in our native flora by two species, are rather peculiar plants, with stiff Thistle-like foliage and with their floral bracts, and in some cases the upper parts of their stems, more or less tinged with blue. This is one of the handsomest of the genus, and grows from 2½ to 3 feet high. The root-leaves are finely cut and spiny, and those of the involucre are, especially in dry warm seasons, of a bright amethystine blue,

as are also, though more faintly, the upper parts of the stems and stem leaves. Native of the Tyrol and elsewhere in Central Europe. Increased by division and seed.

*Statice Limonium* var. *latifolia* (the Broad-leaved Sea Lavender).—This seems to be the best known as it is also the best worth growing of all the hardy Statice. It grows about 2½ feet high, has smooth leathery leaves, and the flowers are disposed in large corymbs or panicles sometimes 2 feet across. They are light blue, and when dried like Everlastings they remain ornamental for a considerable time. I find that the most expeditious way of propagating this plant is to cut a portion of it down a little below the surface of the ground early in spring, when numerous little rosette-like crowns of leaves will be produced in the course of the summer, which can be taken off and potted in autumn, wintered in a frame, and planted out in spring. The type, *S. Limonium*, is a native found, though not plentifully, on some of the muddy shores and salt marshes of England.

*Aconitum paniculatum* (the Branching Monkhood).—The Aconitums are justly regarded with great suspicion on account of their poisonous qualities, but many of them are nevertheless very handsome border flowers. This species or variety is 4 or 5 feet high, with smallish finely cut leaves and branching panicles of flowers, blue variegated with white. It prefers a slightly shaded and dampish border, and may be readily increased by parting its tuberous roots. A native of France.

*Merina longifolia* (the Long-leaved Merina).—This is a handsome Teaselwort with the leaves and spines of a Thistle. It grows 2 to 3 feet, and the flowers, which are white in the bud, become a beautiful rose colour when expanded. They are arranged in whorls round the stem, and give a long succession of bloom. It is thought by many to be a little tender, but I have never seen it killed by frost in light well-drained soils. A native of North India, and increased by seed or division.

*Phygadeuon capensis* (the Cape Phygadeuon).—A beautiful plant too seldom grown, though it is by no means rare. It grows 2½ to 3 feet high, and bears loose drooping racemes of bright vermilion scarlet flowers with yellowish throats. Can be propagated by division or by cuttings like the Pentstemon, to which it is allied.

*Silene Schafta* (the Autumn Catchfly).—This bright little gem is seldom grown, either rockwork or the margins of beds or borders. It is a free-growing but compact plant, seldom rising more than 6 or 8 inches, and producing rosy-purple flowers in great numbers. Easily cultivated, but does best in light sandy soil. Can be propagated by division, cuttings, or seed, preferably the latter. Native of Siberia.

*Verbascum orientale* (the Oriental Mullein).—A stately old-fashioned border flower, growing 4 or 5 feet high and producing long panicles of yellow flowers with purplish throat. Grown in isolated groups or singly on a lawn it is very effective. Propagated by division or seed.—R. D. TAYLOR.

## READING HORTICULTURAL SOCIETY.

THE autumn Show of the Society was held in the grounds of the Abbey Ruins on the 21st inst. The plants exhibited were clean and healthful. In the class for nine stove and greenhouse plants (open) Mr. Mould, nurseryman, Pewsey, was first with a good collection of flowering and foliage plants; and Mr. Lees, gardener to Mrs. Marsland, White Knights, second. For nine variegated and foliage plants Mr. Ross, gardener to C. Eyre, Esq., Welford Park, was first; Mr. Mortimer, gardener to Major Stone, second; and Mr. Bezan, gardener to H. J. Symonds, Esq., Caversham, third. For nine stove and greenhouse Ferns Mr. Bezan secured the chief position with medium-sized and healthy specimens. For single specimen plants the principal prizes in the classes were secured by Mr. Mould, Mr. Ross, and Mr. Pound. In the class for six plants for table decoration there was good competition. Mr. Ross, Welford; Mr. Atkins, Lockinge; and Mr. Brown, gardener to F. J. Barry, Esq., St. Leonard's Hill, securing the prizes in the order named. Fuchsias were shown well by Mr. Mould and Mr. Lees. The first prize, six Cockscombs, from Mr. Bridgeman, gardener to T. S. Cocks, Esq., Marlow, were very fine. Group of plants, 12 feet by 10 feet.—First Mr. Lees, second Mr. Burbridge, third Messrs. Phippin & Robinson, Reading. Bridal bouquet.—First Messrs. Phippin & Robinson. Twelve blooms of Roses.—First Mr. Mayo, Oxford; second J. T. Strange, Esq. Messrs. W. Paul & Son showed excellent boxes of cut Roses, including such new varieties as May Queen, Countess of Rosebery, Duchess of Bedford, and Pride of Waltham.

Fruit was shown well considering the season, but not so extensively as is generally the case at Reading. For eight dishes the prizes went respectively to Mr. Howe, Mr. Atkins, and Mr.

Robinson, gardener to R. J. E. Colledge, Esq., Englefield Green. For six dishes Mr. Tomlin, gardener to Miss Patterson, Bracknell was a good first; and Mr. Crump, Stevenage Manor, second. For four dishes Mr. Bridgeman was first and Mr. Ross second. Three bunches of Grapes (Hamburg).—Mr. Ashby, gardener to W. Fanning, Esq., Whitchurch, was first; Mr. Atkins second, and Mr. Tomlin third. Three bunches of black, not Hamburgs, the prizes went to Mr. Mortimer, Mr. Crump, and Mr. Bland, gardener to J. Graham Smith, Esq., Cranbourne Court. Three bunches of Muscats.—First Mr. Ashby, second Mr. Feist, and third Mr. Ross. Three bunches of white Grapes, not Muscats.—First Mr. Atkins, second Mr. Wells of Fernhill. Mr. Bland secured the first prize for six Peaches, Mr. Atkins for six Nectarines, and Mr. House and Mr. Burgess for Melons.

Vegetables were well shown by Messrs. House, Bellis, Jones, Tanner, and others. The awards of the Judges appeared to give general satisfaction, and the obliging Manager of the Show and Secretary (Messrs. Phippin and Petty) ably carried out all the arrangements.

## DUPLICATE ROSES.

I QUITE agree with "WYLD SAVAGE" that there are far too many duplicate Roses grown; but still I fancy he goes a little too far when he calls Sultan of Zanzibar and Reynolds Hole similar. They are far more distinct than many he does not name in his list of duplicates. Sultan of Zanzibar is a finer and much more constant Rose; in fact, although I grow them side by side, I have not had one single bloom of Reynolds Hole, but my Sultans have been really splendid. Besides, there is a greater difference in growth than "WYLD SAVAGE" detects, also the edges of the petals of Reynolds Hole are quite round, whereas those of the Sultan are serrated.

"WYLD SAVAGE" thinks Mdle. E. Verdier and Marie Finger are identical. I do not. Eugénie Verdier is much brighter, also it is not so free neither so strong in growth, and does not come so surrounded with buds as Marie Finger, at least such is my experience of these unlucky Roses, which are constantly having fault found with them, because they are both beautiful, and one does not know on which to fix his choice. With regard to Mons. E. Y. Teas I think it quite distinct from Madame Victor Verdier.

I agree with "WYLD SAVAGE" that Marie Louise Pernet and Antoine Ducher are very much alike, but still there is a difference in favour of the new comer. I heartily concur in his quotation, "The sooner Maurice Bernardin, Exposition de Brie, and Ferdinand de Lesseps are called under one name the better."

Alba Rosea, Madame Bravy, and Joséphine Malton are much alike, but of the three I think Joséphine is the strongest grower.

I would not have taken up my pen were it not for "WYLD SAVAGE's" remarks relative to Sultan of Zanzibar. I think such a rosarian as Mr. Paul (who sends out both Roses) would be likely to know whether those he was sending into commerce were dissimilar or not; and seeing what beautiful Roses he has from time to time presented us with, I think we ought to be careful in our remarks respecting them.—A. P.

MR. ROBERT BAKER of Heavitree has assured me that Sultan of Zanzibar and Reynolds Hole are quite distinct. He tells me that he had suspicions that Mr. Walters was in a fog about these Roses. Mr. George Paul has sent me blooms and descriptions, which prove that they are distinct. Mr. Baker considers that Duke of Wellington and Fisher Holmes are entirely different. I cannot see this; but he is such an authority that I give his opinion. I wrote, as I stated, from observations I had made at one nursery, the only one I am able to visit frequently. If I had the good fortune to be near Cheahunt or King's Acre I should be able to judge much better on such matters.—WYLD SAVAGE.

## PETROLEUM LAMP STOVES.

I WISH to give publicity to the following facts, hoping thereby to draw forth, for my edification and the public generally, the experiences of others of your subscribers. My house is 22 feet long, 11 feet wide, and of a fair height. I wished to be able to keep up the temperature during the cold nights of the past six weeks from 60° to 65° Fahr. I tested the lamp stove three nights where the thermometer stood at 45° Fahr. without the lamp. At the end of twelve hours I could get no more heat during the night out of this lamp stove than 6° above the temperature of the place I put it in to test



it. It is made by one of the first makers of the day. I trimmed it myself and attended to it personally, and kept it under lock and key. The fourth night of its burning I lit it at 7 P.M. and only put up the wicks to half their proper height, meaning to increase their height at 10 P.M. I was suddenly called out from dinner by my man; the house was full of smoke, the wick in a blaze. Fortunately the wind was blowing strong at the time. Both doors and windows being thrown open and the lamp stove removed, the house was immediately cleared, and no harm has resulted, as would have been the case had it been burning benzoline or paraffin. On examination I found this stove lamp inferior in make and workmanship to the fine lamps by the same maker, of which I have burned seven for two years without accident, breakdown, or smell, using petroleum of the best quality. I should like to hear if anyone has been able to get heat up to 60° or even 55° Fahr. from one of these stoves when the thermometer was at freezing point. I should also like to elicit what is the best and cheapest small and effectual heating apparatus for such a house as mine, not wanted for forcing anything.—SAXORING.

### SHROPSHIRE FLORAL AND HORTICULTURAL SOCIETY.

AUGUST 20TH AND 21ST.

THE above Society held its summer Show of fruits, flowers, and vegetables in the Quarry Grounds, Shrewsbury. These Grounds are very suitable for the Show, as they are within easy reach of the station, which is a great advantage to exhibitors. From the station to the grounds numerous flags were hanging across the street from the houses of the residents, thus showing the great interest displayed horticulturally by the inhabitants of this town. The great display that has just passed was the fifth summer Show of the Society since its inauguration on new and entirely different principles. Previously to that time we learn that the Society was financially in difficulties. It has, however, recovered wonderfully under the new and improved management, and this year the Exhibition was really grand, which must be highly gratifying to the Committee and Hon. Secretaries, and the Society is now in a good financial position. Before the present Show they had about £1000 in hand after having granted the Corporation £100 for the improvement of the grounds where the Show is held, and having paid £150 for a new band stand which was opened on the first day of the Exhibition. These pecuniary resources now place the Society in a position to stand against inauspicious weather, and to offer more prizes open to all England. On the opening day of the Show the weather was most unfavourable, rain falling in torrents; which circumstance, combined with a heavy fall of rain on the preceding evening, and the grounds having been utilised for the agricultural show only a short time before, rendered the turf in a very unpleasant condition for visitors, the mud in some places being ankle deep, while planks had to be laid down, otherwise it would have been almost impossible to pass from tent to tent. This state of things did not daunt the visitors, as bidding defiance to the inclemency of the atmosphere they assembled in great numbers, and on the whole the Show had a good share of patronage.

The schedule contained 182 classes, four being open to all England, thirty-seven entirely devoted to cottagers in the county of Salop. The remaining classes were open to the counties of Montgomery and Shropshire. The Show was a great success as far as the exhibits are concerned. Tent No. 1, which contained all the open classes, was 150 feet long and 50 feet wide; tent No. 2 was 800 feet long, and was well filled with the plants from the counties named; the third tent, which was the same size as No. 1, was devoted to cut flowers, fruit, and vegetables; the fourth and last tent 200 feet long, was well filled with the cottagers' productions. We will first notice the

**PLANTS.**—These were tastefully arranged in two large circular groups in the centre, and other groups round the side exhibited by various nurserymen. The appearance of this tent was very imposing. In the class for twenty stove and greenhouse plants, not less than ten in bloom, Mr. Cypher of Cheltenham, and Mr. Tudgey, gardener to J. F. G. Williams, Esq., Henwick Grange, Worcester, secured the prizes in the order named; the former exhibitor, who overweighed Mr. Tudgey in flowering plants, staged *Lapageria rosea*, a remarkably fine specimen; *Allamanda Hendersoni* and *A. nobilis*, equally good; *Ixora amabilis* and *I. Fraseri*, very good; *Dipladenia amabilis*, clean, well grown, with an immense quantity of bloom; *Bougainvillea glabra*, 5 feet through; *Erica Irbyana*, *Clerodendron Balfourianum*; *Croton majesticus*, a fine plant, and well coloured; *Gleichenias Mendelli*, and *G. spelunca*, very large; *Croton undulatus*, 6 feet through; *Latania borbonica*, *Thrinax elegans*, *Pritchardia pacifica*, *Cycas Normanbyana*, and a very large *Phoenix tenax variegatum*. Mr. Tudgey's plants were *Gleichenia hestiothylla*, 8 feet through; *Eucharis amazonica*, very fine, with nearly forty spikes of flowers;

*Erica Parmenteriana rosea*, 6 feet through; *Croton Johannis*, rather short of colour; *Allamanda Hendersoni*, a good plant, one with very little bloom; *Erica Fairreana*, *E. Williamsi*, *E. Irbyana*, 5 feet, very good; *Ixora coccinea superba*, *Dipladenia hybrida*, *Anthurium Scherzerianum*, a very large plant, and in good condition; *Latania borbonica*, *Stevensonia grandifolia*, *Cocos Weddelliana*, *Encephalartos Vroomii*, and a very large *Sarracenia*.

In the class for nine stove and greenhouse flowering or foliage plants Mr. Farrand, gardener to Mrs. Inson, Abbey Forge, was first with *Erica Aitonaana*, *Ixora amabilis*, *Dipladenia amabilis*, *Clerodendron Balfourianum*, *Erica ampullacea*, *Ixora coccinea superba*, *Croton pictus*, 5 feet through and very well coloured; *Pandanus Veitchii*, and *Latania borbonica*. Mr. William Pratt, gardener to Viscountess Hill, Hawkstone, was second with well grown plants but short of flower. The collection only included one flowering plant, and that was a very good *Ixora*; the others were *Pandanus Veitchii*, *Croton Queen Victoria*, 4 feet through, a fine plant, and well coloured; also a good plant of *Croton fastigiatus*, *Alocasia metallica*, *Cissus discolor*, *Dracena Baptisti*, and *Alocasia macrorrhiza variegata*. Mr. Warrender, gardener to Colonel Meyrick, Apley Castle, was third with good plants of *Erica tricolor Holfordii*, *Ficus Parcelsii*, 5 feet through, having fine variegated foliage of large size, and a well-developed plant; *Croton Weismanni*, *Abutilon Darwinii tessellatum*, 6 feet through; and *Begonia Cheloni*, 8 feet. In the amateurs' class for six stove and greenhouse plants Mrs. Lawrence Burd was first, the second prize being also won by the same lady. Mrs. Wallace was third.

In the open class for six Cape Heaths, distinct, Mr. Pilgrim, Cheltenham, was first with good plants about 4 feet through, of the following:—*Erica Austiniiana*, *E. Shannoni*, *E. Irbyana*, *E. insignis*, *E. Aitoniana*, *E. Turnbulli*, and *E. amula*. Mr. Cypher followed with plants of *Erica Aitoniana*, *E. Turnbulli*, *E. verticillata*, *E. Eweriana superba*, *E. jasminiflora alba*, and a very highly coloured *E. Austiniiana*. Mr. Tudgey, whose plants were *E. Fairreana*, *E. Marnockiana*, *E. amula*, *E. metallica*, *E. tricolor major*, and *E. Macnabiana*, was placed third.

In the class for six distinct Palms Mr. Tudgey was first. In this class it was a contest of quality against size. Mr. Tudgey's plants, not being half the size of the others, were choice, clean, and well grown. The collection included *Kentia australis*, *Geonoma gracilis*, *Pritchardia pacifica*, *Areca Verschaffeltii*, *Geonoma princeps*, and *Cocos Weddelliana*. Mr. Pilgrim was second with *Pritchardia pacifica* and *P. filamentosa*, *Cocos Weddelliana*, *Livistonia altissima*, and a plant of *Areca lutescens*. Mr. W. Pratt was third with *Thrinax elegans*, *Geonoma Verschaffeltii*, *Livistonia altissima*, *Scaevola elegans*, *Latania borbonica*, and *Chamerops Fortunei*. Mr. Cypher obtained an extra third prize with *Pritchardia filifera*, *Latania rubra*, *Areca lutescens*, *A. Verschaffeltii splendens*, *Scaevola elegans*, and *Latania borbonica*. For six *Dracenas*, distinct, there were four entries. Mr. Warrender, Apley Castle, was placed first. The plants in this collection were well grown and of fine colour; indeed we never saw plants in better condition. *Dracena Baptisti*, very fine; *D. ferrea*, and *D. amabilis*, good; *D. Cheloni*, *D. magnifica*, and *D. regina*, which was in better order than we have seen it for a long time. Mr. Pratt, Hawkstone, followed with remarkably good plants, although not so large as the first-prize lot. *D. Goldiana* was in very good condition; *D. Weismanni*, *D. terminalis alba*, very fine; *D. amabilis*, *D. Baptisti*, and *D. regina*. Mr. Dyche, gardener to R. C. Cholmondeley, Esq., was third.

The competition in the class for twelve plants, distinct, suitable for table decoration, was wonderfully close, and it was impossible for the Judges to decide between the lots shown by Mr. Pratt, Hawkstone, and Mr. Warrender, Apley Castle. They, therefore, decided to award equal first prizes to the exhibitors. Mr. Pratt staged in fine condition *Dracena gracilis*, *Aralia Veitchii*, *A. leptophylla*, *Croton Disraeli*, *C. Youngi*, *C. Weismanni*, *Kentia Belmoriana*, *Cocos Weddelliana*, *Geonoma gracilis*, *Dracena amabilis*, *Pandanus Veitchii*, and *Aralia gracillima*. Mr. Warrender's collection comprised *Aralia gracillima*, *Pandanus Veitchii*, *Dracena gracilis*, *Araucaria excelsa*, *Aralia elegantissima*, *Croton majesticus*, *Dracena Guilfoylei*, *Cocos Weddelliana*, and *Reidia glaucescens*. C. C. Coates, Esq., M.P., was second, and Mr. Farrand, gardener to Mrs. Inson, third with smaller plants. For six distinct *Caladiums* Mr. J. Edwards, gardener to Sir C. F. Smythe, Bart., was first with good plants of *C. Chantini*, *C. Hendersoni*, *C. Prince Albert*, *Edward*, *C. Wrighti*, *C. pallida*, and *C. Belleymeii*. Mr. Farrand followed with *C. Prince Albert*, *Edward*, *C. Chantini*, and *C. Napoleon*. The class for six *Begonias* in bloom was very poorly represented. Rev. J. H. E. Charter obtained the second prize, the only prize awarded by the Judges. In the amateurs' class for three plants *E. Burd*, Esq., was first, and R. W. Withers, Esq., second. For six distinct *Colusmas* Mr. John Jones was first with very fair plants of *Duchess of Edinburgh*, *Kentish Fire*, *M. Thiers*, *Drummondii*, *Shah*, and *McMorran*. R. Cholmondeley, Esq., was second with good pyramidal plants about 4 feet through and nearly 5 feet high. Mrs. R. Bird was third. In the class for six *Fuchsias*, Mr. T. Heath, Mr. J. R. Jones, and Lord Berwick were

placed in the order named. For three Fuchsias Mrs. Wace was first, and E. Burd, Esq., second. Lilliums, Gloxinias, Petunias, Achimenes, and Balsams were very poorly shown.

**FERNS.**—The competition in the class for nine distinct exotic Ferns was very keen between Mr. Pilgrim, Mr. Cypher, and Mr. Tudgey, who took the honours in the order named. The first-prize collection included *Nephrolepis davallioides* furcans, *Gleichenia rupestris*, a fine plant; *G. glaucescens*, *Davallia Mooreana*, *Cibotium regale*, *Marattia Cooperi*, *Gleichenia Mendellii*, and *Todea africana superba*. The second comprised *Aleophila australis*, *Adiantum trapeziforme*, *Cibotium Schiedei*, *Adiantum farleyense*, *Davallia Mooreana*, *Gleichenia dicarpa*, *Cibotium regale*, and *Neottopteris nidus*. Mr. Tudgey's group contained dwarf-growing species, such as *Todea superba*, *Adiantum cuneatum*, *A. decorum*, *A. scutum*, a very good plant; and a plant nearly 8 feet through of *Adiantum gracillimum*; *Gleichenia rupestris*, *G. Mendellii*, *Neottopteris australis*, and *Gleichenia dichotoma*. In the corresponding class for six Mr. Warrender was first with good plants of *Aleophila australis*, *Adiantum formosum*, and *A. cardiochilense*. Mr. Pratt second with good plants of *Adiantum cuneatum*, *Dicksonia squarrosa*, and *A. formosum*. Mr. Farrant was last, staging good plants of *Adiantum farleyense*, *Lygodium scandens*, and *Cyrtosia medullaris*. In the amateurs' class for four Ferns Mrs. Lawrence Burd was first, Mrs. Wace second, and John Price, Esq., third. Mrs. Sprott was first with six distinct hardy Ferns, Mrs. L. Burd, second, and Mr. W. H. Harrison third.

**PELAGONIUMS.**—In the class for six double varieties in flower fair numbers were shown, and some of the plants were in very good condition, while others were only moderate. Messrs. Oldroyd and Sons, Shrewsbury, received the first and second prizes, and had good examples of *Adelaide* de Planchon, *Jewel*, *Asa Gray*, *Triomphe*, *Marie Lemoine*, *Boule de Neige*, *Figaro*, *Emilie Lemoine*, and *M. Bontard*. Mr. J. B. Jones was third with smaller plants but similar varieties. For six single Zonals in flower Messrs. Oldroyd & Sons were again first and second with *New Life*, *Ellen*, *Pirate*, *Mulberry*, *John Fellows*, *White Vesuvius*, *Mrs. Jacoby*, and *Lady Sheffield*. Mr. J. B. Jones was third.

**MISCELLANEOUS PLANTS.**—Messrs. James Veitch & Sons, London, exhibited a general assortment of new and rare plants, which were tastefully arranged, and added materially to the effect of the Exhibition. Amongst the collection was a good plant of *Yucca filamentosa variegata*, *Cypripedium Harrisonianum* with several spikes, and a pan of very fine *Bertolonias*, *Dracena Goldieana*, good pans of *Sonerila Hendersonii*, *Pitcher Plants* in great variety, *Lapageria alba*, *Ixora salicifolia*, well-blomed small plants; *Disa grandiflora* with ten flower spikes, *Cypripedium euryandrum*, *C. Parishi*; *Cattleya Loddigesi* with between thirty and forty flowers open; *Odontoglossum Roezii*, *O. vexillarium*. *Rhododendrons* of the newer type were also represented by this firm with such fine varieties as *Duchess of Teck*, *Taylori*, and *Duchess of Edinburgh*. They also staged a very fine *Zygopetalum Sedeni*, resembling *Z. maxillare*, but a very great improvement upon that species, with a great variety of *Crotons*, new *Dracenas*, *Alocasias*, *Ferns*, &c. Messrs. F. & A. Dickson & Sons, Chester, also exhibited a fine collection of plants and Conifers in pots. *Betinosporas*, *Yews*, *Cupressus*, and *Junipers* were represented in great variety; *Ampelopsis variegata* was also well shown in boxes. The collection of plants was good, consisting of well-grown young plants of the newer *Dracenas*, *Coleuses*, and *Crotons*. They also staged *Ferns*, *Palms*, and many other valuable plants. Messrs. James Dickson & Sons also staged a similar assortment of plants, which included a fine *Croton Mortii*, and *C. Johannis*, *Dracena Baptisti*, very large; and many other new *Crotons*, *Ferns*, *Palms*, *Dracenas*, &c. Messrs. W. Pritchard and Sons, Frankwell Nursery, Shrewsbury, also exhibited an assortment of flowering plants, seedling *Lobelias*, *Tuberous Begonias*, *Lilium auratum* and *L. lancifolium*, *Palms*, *Coleuses*, &c. Mr. John Jones, Shrewsbury, and Messrs. Oldroyd & Sons staged similar collections.

**FRUIT** on the whole was of fair quality, and was largely shown. Some classes were well represented, while others, especially the *Grapes* in several instances were short of colour. For a collection of fruit, eight sorts, Mr. Pratt, Hawkstone, was first with good dishes. This exhibitor had his fruit in better condition than any in the Show, and he staged good examples of *Moorkpark Apricot*, *Brown Turkey Figs*, *Royal George Peaches*, *Colston Bassett Melon*, *Black Hamburg Grapes* very good in size of berry, *Pitmaston Orange Nectarines*, a *Pine*, and *Warrington Gooseberries*. Mr. Milner, gardener to Rev. J. B. Corbett, was second with black and white *Grapes*, *Melons*, *Strawberries*, *Plums*, *Apricots*, *Nectarines*, and a small *Pine*. For two bunches of *Black Grapes* Mr. Pratt was first with *Black Hamburg*, very good; *Viscount Boyne* second with the same variety, only short of colour; Mr. McLean, gardener to Lady L. Cole, was third. For two bunches of white *Grapes* Mr. Pratt was first with *Muscat of Alexandria* in very good condition; Mr. Pearson, gardener to Lord Berwick, second with *Buckland Sweetwater*, and Mr. Milner third. For two bunches of black *Grapes* (amateurs) Mr. B. Thomas was first; Mr. W. J. P. Hopkins, gardener to Mr. Watton, second; and Mr. R. E. Clarke third. Mr. Warrender and Mr. Edwards, gardener to

S. F. Smythe, Esq., received the prizes for *Pine Apples*. Mr. Warrender was first in the class for six *Peaches* with *Royal George*; Mr. Edwards second with *Lord Palmerston*, very large; and Mr. E. Allen, gardener to Mrs. Stackhouse, third.

**CUT FLOWERS.**—These were largely shown in some classes, while others were not represented at all, such as the classes for *Hollyhocks*, *Dahlias*, and *Gladioli*. *Roses* were shown in fair quantity, the blooms being in poor condition and much dashed with the heavy rains. Two boxes were staged by Messrs. James Dickson & Sons (not for competition). The following blooms were good:—*Prince of Wales*, *Louis Van Houtte*, *Général Jacqueminot*, *Charles Lefebvre*, *Victor Verdier*, *La France*, *Alfred Colomb*, and *Marie Baumann*. In the class for forty-eight blooms Mr. W. Henderson, Ashford Court, was first; he had good blooms of *Reynolds Hole*, *Lord Macaulay*, *Alfred Colomb*, *Gloire de Dijon*, *Annie Wood*, and *La France*. Mr. William Davies, Ludlow, was second, staging good blooms of *Dupuy-Jamain*, *Duke of Edinburgh*, and *Alfred Colomb*. For twenty-four blooms Mr. William Davies was first, Mr. Chandler second, and Mr. E. Clarke third; and for twelve blooms Mr. Crump was first, Mr. E. W. Pritchard second, and Mr. G. Townsend third. Mr. Clarke, Mr. J. Holmes, Mr. Harrison, and Mr. Jones were the principal prizetakers in the classes for *Asters* and herbaceous *Phloxes*. Mr. E. Davies, Mr. Pearson, Mr. Robinson, Mr. R. D. Newill, and Mr. Speake were successful exhibitors of *Stocks*, *Carnations*, and *Picotees*. The class for twelve varieties of stove and greenhouse blooms were well competed for by Mr. Pratt, Mr. John Jones, and Mr. Farrant, who took honours in the order named. The first-prize collection was a very fine assortment, having good trusses of *Ixoras*, *Bougainvilleas*, *Stephanotis*, *Anthuriums*, and *Allamandas*. Two boxes of *Gloxinias* (seedlings) were exhibited by Mr. E. Davies not for competition. Bouquets were numerous, Mr. J. Jones, Cotton Hill, taking the first prize; Messrs. Oldroyd and Sons the second, and Mr. J. Bain, Downton, third. For the bridal bouquet Mr. Jones was again first; Rev. J. H. Leigh Astley second, and Messrs. Oldroyd & Sons third. *French* and *African Marigolds*, *Pansies*, and *Verbenas* were staged in large quantities, but not in first-class condition. Stands of cut flowers for table decoration and also stands of wild flowers were shown in quantity, and added materially to the attractions of the tent in which they were placed. Many of them were elegant, light, and tastefully arranged. Mr. J. Jones received the first prize; Mr. H. Jones the second, and Mr. R. W. O. Williams the third.

**VEGETABLES.**—These were shown in large numbers. In some classes as many as fifteen collections were staged. On the whole they were very good. For the collection of not less than ten varieties we counted sixteen exhibitors. Mr. E. Davies was first with good vegetables, this exhibitor showing nearly thirty different sorts; for instance, two varieties of *Celery*, two or more of *Potatoes*, *Tomatoes*, *Onions*, *Turnips*, &c. The other fifteen exhibitors adhered to the ten varieties. Mr. Pratt was second, and Mr. McLean third. For twelve kidney *Potatoes* Mr. Milner was first with *International*; Mr. A. Myers second, and Mr. E. Allen third. For twelve kidney *Potatoes* (red) Rev. Hon. C. W. A. Fielding, Stapleton, was first; Mr. Chandler second, and Mr. Farrant third. For twelve round *Potatoes* (white) Sir C. F. Smythe, Bart., was first, Mr. Henderson second, and Mr. Brown third. The competition in these classes was so close that it must have been difficult work for the Judges. The remaining classes for *Peas*, *Farsnips*, *Celery*, *French Beans*, *Onions*, *Turnips*, &c., filled the whole side of a large tent, and the names of the prizetakers in the various classes have already been mentioned, Mr. Pratt with one or two others taking the lead.

The tent that was devoted to cottagers was thoroughly well filled with plants, fruits, cut flowers, and vegetables. The quality of the plants of course was not very high, at the same time they were very creditable. Of the commoner fruits as many as forty dishes were staged, and the same number of *Apples*, *Currants*, &c. The vegetables were good, and their quantity was remarkable.

We congratulate the Honorary Secretaries, Mr. H. W. Adnitt and Mr. W. W. Naunton, and the Committee for the very satisfactory way in which the Show was managed and conducted. Such a success could only be attained by united action and assiduous labour on the part of all who had the management of it.

## STRAWBERRIES.

I AM not surprised that Mr. C. P. Peach is not able to agree with me as to the merits of certain varieties of *Strawberries*, and the difference between us would be still greater but the soil and climate are not very different. We both have a light soil, and if I understand rightly, both soils are derived from the oolitic rocks. He cannot grow *La Constante*, and finds it of inferior flavour. With me it succeeds very well, and the quality is of the first class. I have on many occasions gathered several varieties when in good condition, and asked visitors their opinion as to their merits with reference to flavour, and they all pronounced *La Constante* to be equal if not superior to any. Mr. Peach says he can grow as large a weight with

Lucas and some others as with Keens' Seedling. I am glad to hear it and hope I may do the same, but I do not expect it. Some seasons I grow perhaps as great a weight with Sir J. Paxton and other large varieties, but in other seasons there is a great falling off. The great mistake made by beginners in gardening is that they look over lists of Strawberries and other fruits, and select all the most highly praised without considering the soil and situation at all, and the result very often ends in disappointment. They should choose rather those which succeed well in the district where they live. I am much obliged to Mr. Peach for his hint about the preserve. He speaks of Dr. Roden's seedlings. There were some which were to prove later than any in cultivation; are they coming to the front or receding to the far distance?—*AMATEUR, Cirencester.*

## ROYAL HORTICULTURAL SOCIETY.

AUGUST 26TH.

THIS meeting was not characterised by any extraordinary display, although the exhibits were sufficiently numerous and good to impart some interest to it. The chief features were Mr. Cannell's collection of flowers, and the Gladioli from Messrs. Kelway & Son of Langport, which are mentioned below. Messrs. Perkins' Roses were also noticeable for their freshness and substance; and Messrs. Turner, Bull, and Smith all contributed collections of more or less merit.

**FRUIT COMMITTEE.**—Henry Webb, Esq., in the chair. There was a poor display of fruit, a few Melons and Apples only were staged. Messrs. Carter offered prizes for a single fruit of Dell's Hybrid Melon, for which five competitors appeared. Mr. T. Taylor, gardener to J. McIntosh, Esq., Duncevan, Oaklands Park, obtained the first prize with a fruit of moderate size and well ripened. Mr. Thomas Jones, The Gardens, Elvetham Park, Winchfield, was second; and Mr. J. Burnett, The Gardens, Deepdene, Dorking, was third with smaller fruits. Mr. Gray, gardener to O. Seely, Esq., Brooke, Isle of Wight, sent two fruits of Gray's Seedling Apple finely coloured. Mr. J. Douglas, The Gardens, Loxford Hall, Ilford, sent dishes of excellent Kerry Pippin and Strawberry Pippin Apples. Messrs. Hurst & Sons, Leadenhall Street, exhibited a dish of New Mammoth Negro Beans, for which a first-class certificate was awarded. The variety is very prolific and the pods are of great size. Messrs. E. A. Webb & Sons, Stourbridge, sent dishes of a new Marrow Pea, and Messrs. James Cock & Son, Weybridge, exhibited a seedling Pea named Cock's Conqueror. Mr. Wm. Culverwell, The Gardens, Thorpe Perrow, Bedale, exhibited Peas and haulm of a new seedling Pea named Autumn Marrow, of great size and very prolific.

**FLORAL COMMITTEE.**—Dr. Denny in the chair. Mr. H. Cannell, Swanley, Kent, exhibited extensive collections of Verbenas, Phloxes, Fæonies, and French Marigolds. Among the Verbenas were several excellent varieties both in colour, size of flowers, and truss. Lady Langesbury was remarkably distinct—each lobe of the corolla has a broad stripe of pale lilac down the centre, and a white margin; Marquis of Salisbury, a fine crimson purple; Shakespeare, rich scarlet with a small yellow eye; Esmeralda, large, white streaked and spotted with purple; Kentish Beauty, dark purplish blue, neat truss; Boule de Neige, an excellent white; Lady Leigh, pale purple, close truss; Lord Leigh, good scarlet with minute eye. The Marigolds were finely formed and brightly coloured. The Phloxes were distinguished by their large flowers and trusses, The Queen being a fine white. A gold medal was awarded for the collection. Messrs. Kelway & Son, The Nurseries, Langport, sent a very large collection of Gladioli, comprising forty-eight spikes, some of which were of extraordinary size. The most noteworthy varieties were Admiral Willis, a handsome scarlet salmon, large flowers and spikes; \*Electra, a rosy pink faintly streaked with white, good spike; Earl Dalhousie, slightly streaked with pink; \*T. S. Ware, rich scarlet, with a faint pinkish tinge at the base of the lower petal, spike of enormous size; Queen Mary, white, the lower petals streaked with rosy lake; A. F. Barron, light salmon ground streaked with dark shade, lower petals streaked with purple, large spike; \*Samuel Jennings, scarlet, narrow white streak down the centre of each petal, lower one white except the tip; Jessica, a delicate pink, base of lower petal whitish yellow, very pretty; \*Duke of Connaught, crimson streaked, good spike, well-formed flower; \*Duchess of Connaught, white, with the lower petals streaked with lake. A vote of thanks and a gold medal were awarded for this handsome group. First-class certificates were awarded for the varieties marked with an asterisk.

Mr. William Bull, King's Road, Chelsea, exhibited a number of new plants, and first-class certificates were awarded to the following:—*Carludovica Drudei*, a light green fan-leaved Palm with long petioles; *Kentia Wendlandi*, pinnate leaves, with a broad bifid terminal portion; *Enccephalartos Frederici Guillemi*, with short stiff pinnate leaves of a glaucous hue; *Agapanthus umbellatus albus*, umbels large, flowers small but numerous, pure white with yellow anthers, leaves dark green and narrow. Several other

plants were sent, and among them was a pan containing about twenty superb flowers of *Tigridia grandiflora*. The Committee recognised their merit by according Mr. Bull a vote of thanks. From the Society's garden at Chiswick was sent a large collection of crimson and yellow *Celosias* and *Cockscombs*; also plants of *Abutilon Sellowianum marmoratum* with extremely large leaves, some being 10 inches long and the same in width. Six plants of the peculiar *Reidia glaucescens* were also exhibited, and seedling *Begonias*. Mr. Charles Turner, The Royal Nurseries, Slough, exhibited four boxes of remarkably handsome *Picotées*, the strain of which was highly commended. First-class certificates were awarded to the following varieties:—*Princess Beatrice*, pale yellow, light crimson edge, slightly streaked, good flower; *Sultana*, a light scarlet self, large and good; and *Lady Rosebery*, a delicate pale yellow self, well formed. All the flowers were very fresh and bright and of good substance. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, exhibited flower spikes of the new *Montbretia Pottii* from South Africa—long spikes of small orange-scarlet flowers. Messrs. Perkins & Sons, Coventry, contributed four boxes of cut Roses, the majority of which were in good condition, notably *Louis Van Houtte*, *Alfred Colomb*, and *Mona. E. Y. Tessa*. The boxes contained on an average twenty-four blooms each. A silver Banksian medal was awarded for this collection. Messrs. F. and A. Smith, West Dulwich, were accorded a vote of thanks for a large plant of *Asparagus plumosus* and a collection of *Balaams* moderately well flowered. Messrs. James Carter & Co., High Holborn, contributed some new *Celosias*, among which *Canary Bird* was noticeable for the preponderance of yellow in the foliage. The Committee desired to see larger plants of the varieties. Mr. Lloyd, gardener, Brookwood Asylum, Woking, also sent some new *Celosias*, the variety named *Allen Chandler* being the best, having very dark crimson foliage and compact habit. A vote of thanks was accorded the latter exhibitor.

## PEAR ELECTION.

I FEAR I am about to write what will cause some disappointment, and I feel it myself. I have been putting off writing day after day—I have had my elbow jogged metaphorically by somebody at 171, Fleet Street, jogged by a letter, "We shall be glad of your notes on the Pear Election;" but if you, Messrs. Editors, will be "glad" of my notes, I am sorry to have to write them, and Pear-growers, especially amateurs, will be sorry to read what I write. How am I to begin? What a difference there is about writing letters! Say there is a bundle of them to be answered, and there is a disagreeable one in the bundle, you answer all the others first, at least I do. 'Tis so pleasant that one's fingers itch to begin. "I am so much obliged to you, my good friend, for your kind invitations," &c. But the letters are all answered except that nasty one, and there it lies staring at you—squinting at you with its disagreeable eye, so to speak. But about this Pear election. How am I to begin? Well, perhaps it is best to blurt out the distasteful truth at once, like pulling at once the string of a shower bath, for it must be done. There is not to be a Pear election. "And why not?" will ask in turn a great many voices? Well, because those in authority forbid it in the wide interest as they deem it of pomologists and of the fruit-growers generally. The Apple election was a disappointment; the varieties that came to the front were those not necessarily the best, but because they were the most widely grown. As an instance of this, *Blenheim Pippin* heads the list of dessert Apples when most certainly it is not the best dessert Apple grown in England, but its position is explained by Mr. Kellick, *vide* Apple Election, *Journal of Horticulture*, Nov. 8th, 1877, that "it is at the head of the list, not on its merits as a dessert Apple, but on the votes awarded in both kinds, dessert and kitchen, and if left in the two lists it would not have had due justice rendered to it." This is a fair explanation, though it would have been better to my thinking for it to have appeared in both lists, for most certainly *Blenheim Pippin* is far from the best of either kitchen or dessert Apples. I individually answer the objection raised. But in regard to Pears no contest can take place between dessert and kitchen, for the Pear is specially a dessert fruit, and only a very brief list of stewing Pears would be added. The objection as to the varieties most known coming to the front may be answered, that in time the best will be most widely grown. The point is, how to make the public know which are the best. My own idea was and is by an election judiciously made by amateurs, and I think amateurs only. If the knowledge of the best classes of fruit is to be increased all mere trade considerations must be thrown to the winds. I am aware for similar reasons that the Rose election is objected to, and that the new sorts

have a hard struggle to get themselves sold. My answer is, that if really first-rate they will make head in time. When I speak of amateurs as electors I certainly would be understood to include gardeners, particularly head gardeners in large gardens; their opinions would be most valuable. What I want to read is the state of affairs in thousands of gardens where stand Pear trees, very handsome as trees I grant, but bearing inferior fruit; and yet there the trees stand, and their owners when inclined to root them up do not know what are the best trees to put in their places. An election, I think, would help such people to a right knowledge.

But the election as an election according to my ideas is not to be. What may be done in the columns of the Journal is, that cultivators can send the names of Pears which thrive best with them, stating locality; soil, stocks, and any other particulars that are necessary should also be named. That these returns will be published but no tabulation made, then readers can draw their own conclusions. This I hope will be done, and some good, no doubt, will be the result, though individually I am disappointed that no more extended plan is to be carried out.—WILTSHIRE RECTOR.

[In an election of Pears such as our correspondent desires some of the very finest varieties would inevitably fall low on the list, for the obvious reason that they are not grown by all who would send in returns, and hence Pears of intrinsic merit would be placed in a false position, while varieties that are more largely grown would have a value attached to them that they do not legitimately possess. Lists of Pears as grown in different localities with the cultivators' notes on the varieties, and other relative information of a useful tendency, will be readily published as suggested in the last paragraph of "WILTSHIRE RECTOR'S" letter.—EDS.]

#### NOTES AND GLEANINGS.

ALTHOUGH Saturday last was in some districts one of the finest days of the summer, in London and vicinity it was one of the wettest. From early morning until past mid-day the rain fell in torrents, causing much damage to dwellers in low-lying localities, and many gardens, as well as the London parks, were almost rendered flowerless by the drenching they sustained. The subtropical department of Battersea Park was converted into a miniature lake, the lower part of the lawn being submerged for some hours. The only portion of the decorations that was not materially injured by the downpour was the carpet bedding where Lobelias were not employed in the designs.

— IN the Temperate house at Kew we recently noticed that the shrubby VERONICAS were flowering most profusely, and their value as decorative plants in a winter garden, such as the one at Kew, cannot be estimated too highly. Veronica imperialis is a remarkably handsome plant, similar in habit and foliage to V. Andersoni, but the numerous long pyramidal spikes are densely crowded with rich rosy-crimson flowers. V. Andersoni forms an admirable contrast to the last, bearing equally fine spikes of deep purplish-blue flowers. The variegated form of this species is also extremely ornamental; the foliage is finely streaked with creamy white, and the flowers are of lighter blue colour. Planted out in a good border of sandy loam the plants speedily attain a large size; and although the flowers are somewhat fugacious, the large number produced compensate for this defect.

— "AMATEUR, Cirencester," asks if any of our readers can give him the receipt for rendering LABELS indelible. He believes they are dipped in lime water, and afterwards in a solution of sulphuric acid and water.

— MR. HUDSON, Sir W. Armstrong's gardener, informs us that there is a very fine plant of DESFONTAINIA SPINOSA at Cragside, near Rothbury, Northumberland, grown in a border that is protected during winter with glass. The plant is now in full flower. In the same border there is a plant of BEBERIDOPSIS CORALLINA, which does remarkably well. These two plants, Mr. Hudson states, are greatly admired.

— ON the occasion of the unveiling of the statue in honour of the late MR. VAN HOUTTE at Gendbrugge, near Ghent, on the 17th inst., a large number of botanists and horticulturists assembled, forming a cortege upwards of a mile in length. The monument, which is placed close to Mr. Van Houtte's famous nurseries, represents Flora crowning the great horticulturist with a Laurel wreath. Suitable addresses were delivered by the Governor of Hainault, the Mayor of Ghent, and others,

and in the evening a banquet was held in honour of the occasion.

— THERE is a very fine display of LILIUM AURATUM IN MESSRS. VETCH'S NURSERY at Chelsea, a large house being entirely filled with plants flowering in 5 and 6-inch pots. Small as the pots are, several of the plants are supporting a dozen grand flowers, and some of the varieties are very beautiful. Not many Orchids are flowering now. A few of the most striking are Oncidium concolor, Saccolabium Blumei, and Dendrobium Parishii, very rich; D. formosum, fine; with a few Odontoglossums, Cattleyas, and Cypripediums. Amongst the plants not flowering a splendid and healthy importation of Phalenopsis attracts notice, as also do the Dendrobiums on account of their robust growths, the plants being grown in small saucers suspended from the roofs of the houses. Not less attractive to many visitors are the Vines in pots, upwards of two thousand of which are grown in the nursery, remarkable for their hard and nearly pitiless wood and bold eyes—the sure precursors, with good management, of satisfactory crops. Several plants of Gaura Lindheimeri are flowering; the flowers bluish white, and borne in spikes 2 feet high, resemble in form large Lobelias. This plant is largely grown in Parisian gardens.

— A CORRESPONDENT who has recently visited the nurseries of MESSRS. MACK & SON of Catterick and Scorton, Yorkshire, successors to the late Mr. J. Harrison, states that the Napoleon stock for Roses is largely employed. The stock was received from France, and was first used by the late Mr. Harrison upwards of twenty-five years ago. It is found to produce an unusual number of fibrous roots, hence its adaptability for Tea Roses; indeed all kinds of Roses succeed well on it, and it is readily struck from cuttings. Amongst the newer Roses Mr. Mack speaks highly of Boieldieu, Egeria, Lord Beaconsfield, Clement Nabonnand, Louis Richard, Madame Lambert, Madame Welch, and Mabel Morrison. Budding was just at its height, and some acres were done. The buds are inserted well below the soil, a portion being taken away for the better performance of the work.

— A PUBLIC meeting was held at Richmond on Monday evening for the purpose of taking steps to raise a substantial relief fund for the nurserymen and florists in Richmond, Twickenham, Teddington, Brentford, Isleworth, Ealing, Kew, and neighbourhoods, who have been sufferers by the DISASTROUS HAILSTORM OF AUGUST 3RD, and who have little or no means left to repair their grievous losses. Mr. J. Fraser presided, and gave an outline of the operations of a committee of a similar fund which was raised after a hailstorm which swept over the north of London a few years ago. A resolution declaring the necessity for the fund having been adopted a Relief Committee was appointed, with Mr. Pennyfather, manager of the London and County Bank, Richmond, as Treasurer, and Mr. Richard Dean of Ealing as Hon. Secretary. About £350 had been promised before the meeting, and several additional amounts were handed in.

— THAT interesting and handsome native tree PYRUS AUCUPARIA, the Mountain Ash or Rowan Tree, is scarcely to be rivalled as an ornamental tree when bearing its numerous clusters of small bright orange-coloured fruits. There is an instance of this in Windsor Castle, where a fine specimen rises from the Castle slopes high above the Terrace walls. The tree is loaded with "berries," the brilliant colour of which combined with the graceful pinnate foliage renders it an object of admiration to all visitors.

— THE condition of the SPRUCE FIR (*Abies excelsa*) and others of that genus of the Coniferous tribe has been exciting a considerable degree of attention in various parts of the country for some time past, having in some districts exhibited strong symptoms of premature decay, and in certain cases they appear to be actually dying out, although said to be perfectly healthy and vigorous up to within about two years ago, when the "disease" that is killing them first made its appearance. The first sign of the disease being present is indicated by the trees assuming a yellowish sickly aspect, which quickly gives place to a rusty brown or scorched-like appearance, followed ultimately by the dropping of the leaves, the death of the tree ensuing in accordance with the laws of Nature in evergreens so denuded of their foliage. The subject is of the greatest importance to the arboriculturist, as the spread of the disease would entail heavy loss on the owners of Spruce plantations, as it appears to attack indiscriminately all the species of the Spruce Fir family grown in this country. At



the recent meeting of the Scottish Arboricultural Society the subject was brought under the notice of the members present in an able paper, read by Mr. C. S. France of Penicuik, upon which a considerable amount of discussion ensued, and the fact was stated that the disease had been long known to exist in situations inimical to the healthy growth of Spruce. It was also stated that the disease has within recent years attacked *Abies Menziesii*, *A. Smithiana* or *Morinda*, and *A. orientalis*, and that no species of Spruce Fir cultivated in this country is exempt from its attacks.—(*Journal of Forestry*.)

#### A NEW TREE PRUNER.

We have received from the Standard Manufacturing Company, Derby, an implement which surpasses all others of its kind with which we are acquainted, and which cannot fail to be of great value in pruning trees of all kinds that cannot



Fig. 20.—Tree Pruner.

readily be reached with a ladder. For shortening small branches that overhang carriage drives this implement will be invaluable. It combines lightness with strength, and does its work in the most satisfactory manner. Unlike the old averruncator, which is worked with a string, this pruner is worked with a metal rod and lever, and the branches are cut precisely in the same manner as when severed with an ordinary pruning knife—that is, there is no bruising, but a clean steady smooth cut. We have severed with ease wood an inch in diameter without any abrasion or splintering whatever. In using the pruner all that is necessary is, with the left hand to hang the hook of the implement on the twig or branchlet to be severed, as shown in the annexed figure, and to draw down the lever with the right hand, and the work is done with ease and satisfaction. The pruners are made of different lengths, and will sever all branches up to an inch in diameter. The small blade is moveable, and can be taken out and sharpened as required, and if at any time it becomes injured it can be replaced with a new one at a trifling cost. The new pruner

will probably become a favourite with gentlemen, foresters, and gardeners who require something of the kind for trimming tall trees.

#### COTTAGE GARDEN SHOW AT KINGSTON VALE.

AUGUST 21ST.

PRINCIPALLY through the exertions of Mr. Dartnall (Messrs. Veitch's manager of the Coombe Wood Nursery) a very fine display of cottagers' productions were collected together on the 21st inst. Kingston Vale is quite a rural village, belonging to H.R.H. the Duke of Cambridge, and situated within a very short distance from White Lodge, the seat of the Duke and Duchess of Teck, who took a very deep interest in all the proceedings, and notwithstanding the downpour of rain all the morning they came and distributed the prizes during the afternoon.

There was a most artistically arranged bank of plants on the whole of one side of the building, the groundwork being principally *Selaginella denticulata*, with an outer edging of *Isolepis gracilis*, and distributed over its surface were small Palms, *Caladium argyrites*, Orchids, and other flowers. The plants in this group were mainly contributed and arranged by Mr. Dartnall, Mr. Baker, and Mr. Denning, and were greatly admired. On the opposite side were arranged the cottagers' productions, which taken collectively were very good indeed. In the class for three window plants there were no less than nineteen competitors. This was no easy class to judge. At the ends of the building were displayed collections of fruit, which were extensively shown, especially Grapes, of excellent quality and well finished—in fact, we heard a good authority (Mr. H. Veitch) say the Show contained the finest coloured Black Hamburgs he had seen this season. Mr. Baker, gardener to E. C. Baring, Esq., sent two very fine bunches of Muscat of Alexandria and two of Black Hamburg, a good Melon, Late Admirable Peaches, and Tomatoes. Mr. Ollerhead, gardener to Sir Henry Peek, Bart., contributed several bunches of Grapes; these, together with Mr. Baring's fruit, were presented to H.R.H. the Princess Mary. Mr. Moorman, gardener to Miss Christy, staged three stands of Black Hamburgs and Foster's Seedling Grapes. Mr. Fanning, The Convent, Roehampton, contributed an extensive collection of fruit, as also did Mr. Davis, gardener to the Rev. J. Porter, Roehampton Park, and Mr. Lowman of Kingston Hill. Mr. Davies, in addition to three or four stands of Grapes, exhibited a large basket containing several pounds of well-finished Hamburgs.

In a large marquee were several tastefully arranged groups contributed by Mr. Lees, gardener to the Earl of Dunraven; Mr. Denning, gardener to Lord Londesborough; Mr. Baker; Mr. Ollerhead; Mr. Crafter, gardener to the Rev. W. Finch; Mr. Kent, gardener to G. W. Curtis, Esq.; Messrs. Veitch & Son, Mr. Kinghorn, Mr. Moorman, &c., and these several collections were well arranged. At 4 P.M. the Duke and Duchess of Teck with their youthful family arrived, and were escorted around accompanied by a numerous and fashionable assemblage of visitors, including the Countess of Leven, Lady Sophia Melville, Lady Peek, Lady Bushby, &c. Mr. Harry Veitch, being specially sent for, pointed out the various exhibits to their Royal Highnesses. A charming bouquet sent by Sir H. Peek was presented to the Duchess, and another to her daughter, the Duke and his son receiving button-hole bouquets. Among the list of special prizes we noted that three prizes were given by the Duchess of Teck for the best-kept cottage garden. The Duke of Cambridge also gave the prizes for a collection of vegetables; and four prizes were given by the Duke of Teck for the best bunch or basket of garden flowers, for all of which there was excellent competition. Many other exhibitors' productions were unusually good. The schedule was very complete and varied, and great praise is due to Mr. Dartnall and Mr. Sawyer, the Hon. Secretary, for bringing everything to such a successful issue.

#### CHOICE GARDEN ORCHIDS.—No. 7.

CATTLEYA.

(Continued from page 92.)

*C. Mossiae*, Hook. (Bot. Mag., t. 3669).—The figure here quoted is the original form, and therefore must be accepted as the normal state of the plant. Since its first flowering, however, such an immense number of grand varieties have been introduced and have become such general favourites that the name of Mrs. Moss of Liverpool, in whose honour it was named by Sir William Hooker, will not soon pass from the memory of Orchid growers. Pseudobulbs clavate, slender at the base, much furrowed, supporting a single, spreading, oblong-obtusate leaf, which is deep green above, paler below. Whole plant 12 to 18 inches high. Scape erect, many-flowered; blooms 5 to 6 inches in diameter, and delicately fragrant. Sepals lanceolate, acuminate; petals much larger than the sepals, oblong-ovate. When first expanded the sepals and petals are nearly white, changing with age to soft delicate rose; lip three-



lobed, obovate-crenulate on the margin; middle lobe large and spreading, colour rich carmine streaked with yellow and | streaked with brown. It blooms during spring and summer. La Guayra. 1836.

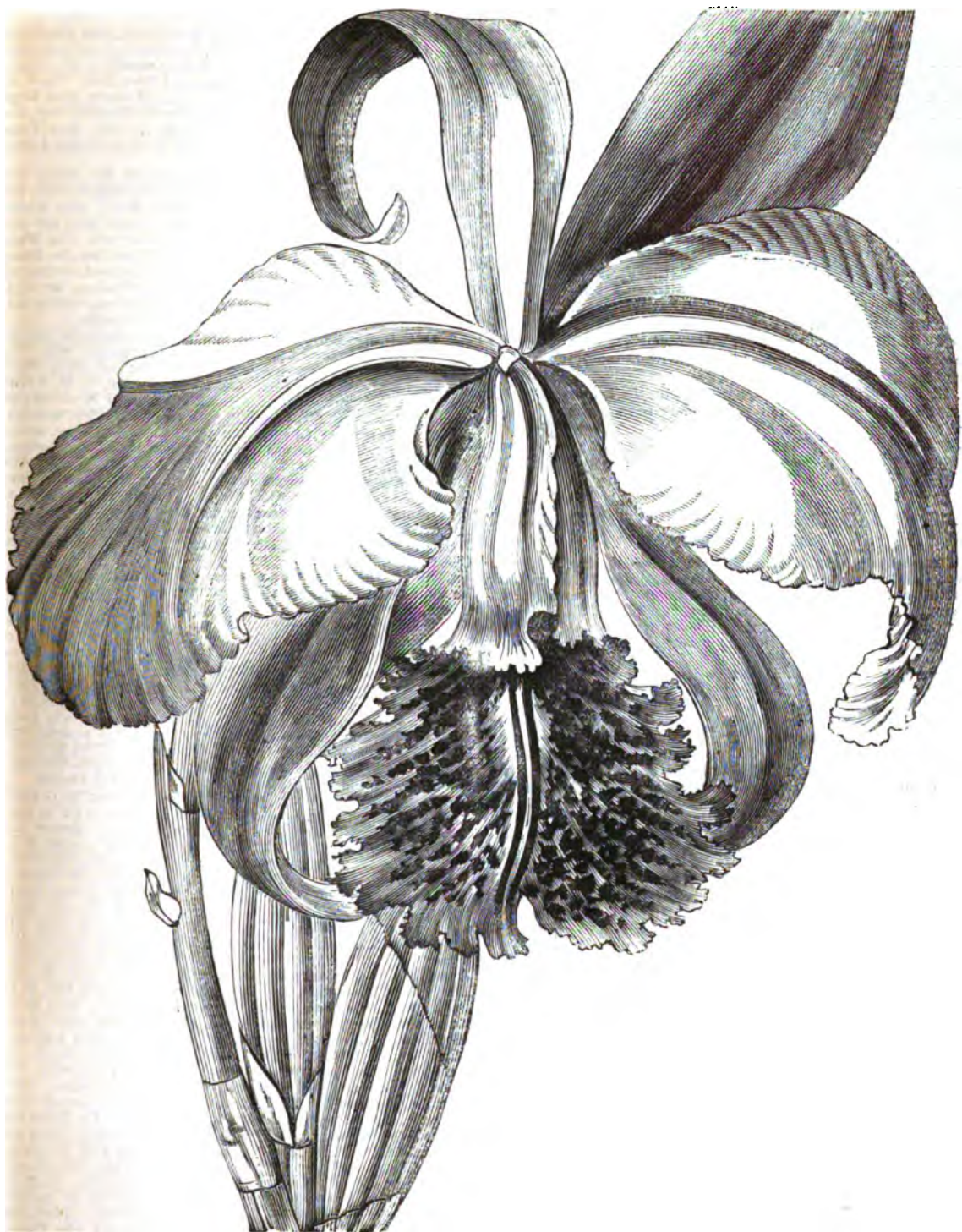


Fig. 21.—CATTLEYA MOSSIAE.

The following handsome varieties are equally as deserving of cultivation as the typical species: *C. M. var. Ainsworthii*.—A grand variety, petals and sepals creamy white; lip rich rosy purple with clear lemon-coloured throat. *C. M. var. aurea*.—Sepals and petals blush colour; lip strongly marked with buff orange at the base. *C. M. var. aurea grandiflora*.—Flowers larger than the last, sepals and petals similar; lip stained with orange at the base. *C. M. var. aureo-marginata*.—Large flowers, lip with deep violet-rose centre. *C. M. var. Blakel*.—Lip orange-buff at the base mottled with violet-rose. *C. M. var. complanata*.—Petals not frilled; lip veined and mottled with purple. *C. M. var. conspicua*.—Flowers large; lip richly marked with violet-rose, margin broad and pallid. This variety blooms very profusely. *C. M. var. elegans*.—Similar to the last,

but the flowers are smaller. *C. M. var. fimbriata*.—Flowers extremely large, with much-cripsed sepals, petals, and lip. *C. M. var. flammea*.—Flowers small but finely coloured; lip deep rich orange colour marked with rosy violet. *C. M. var. grandiflora*.—Lip deep purple rose slightly stained with orange. *C. M. var. grandis*.—The labellum in this variety is the largest of the series; it is prettily mottled with violet rose. *C. M. var. Helenae*.—Similar to the last but more brightly coloured. *C. M. var. Lawrenceana*.—A handsome form; lip stained with orange and slightly veined with violet rose. *C. M. var. Mariana*.—A distinct small-flowered form. Sepals and petals white; lip mottled with rosy violet and edged with white. *C. M. var. marmorata*.—A form with very light flowers; lip finely fringed. *C. M. var. Mooreana*.—A beautiful form, easily distinguished by the clear narrow white border of the lip. *C. M. var. Napoleonis*.—Flowers very erect, with a charming rosy tinge. *C. M. var. purpurata*.—Flowers large; lip deep violet-rose marked with orange. *C. M. Rothschildiana*.—Lip orange-coloured at the base, lined with rosy purple. *C. M. var. splendens*.—Resembling the last, but the labellum is more brilliant. *C. M. var. striata*.—Lip striped with dark purple-rose. *C. M. var. superba*.—A handsome form. Sepals and petals dark bluish; lip large, stained with orange. *C. M. var. venosa*.—Lip stained with orange and beautifully fringed. *C. M. Victoria*.—The orange markings on the lip very distinct. *C. M. var. Wagneri*.—Sepals and petals pure white; lip also white with an orange stain in the centre. *C. M. var. Williamsi*.—A beautiful variety with pale bluish flowers; the lip marked with orange. All these varieties are eminently worthy of cultivation.

## NATIONAL CARNATION AND PICOTEE SOCIETY.

### NORTHERN SECTION.

THIS Society held its Exhibition on Saturday, the 24th inst., in the large conservatory at the Botanic Gardens, Old Trafford, Manchester. The day was one of the finest of the year, but the Show, as was expected, was far from being a good one; many growers were unable to bring any flowers, whilst those that were brought were generally of inferior quality, as they had nearly all been brought on under glass.

Amongst the best of the older varieties Admiral Curzon was very fine, whilst Mars was noticeable for its dirty white. In crimson bizzarres J. D. Hextall was in the first rank, and very fine. In pink and purple bizzarres Sarah Payne, with its pure white, and James Taylor, were the best. In purple flakes Dr. Foster was the best, closely followed by James Douglas. In scarlet flakes Sportsman and Clipper were fine, and in rose flakes Sybil and John Keet were very good; this latter variety winning premier.

Amongst Picotees, in heavy reds the best were Mrs. Fuller, very fine; Lord Valentia, fine; William Summers, Morna, and J. B. Bryant. In light reds Thomas William and Violet Douglas were far the best. In heavy purples Zerlina was the best; another called Isabella was very fine. In light purples Ann Lord and Mary were fine; whilst in heavy roses Miss Horner was very good, winning premier with a fine young bloom; other good ones were Rosy Queen and Edith Dombrain. In light roses Miss Wood was the best; Teresa and Mrs. Allcroft were also fine.

There were not many seedlings exhibited, and some of those shown would have been as well absent. Amongst the best was a scarlet bizzarre exhibited by Mr. B. Simonite, a beautiful flower with the purest striping perhaps ever seen. In crimson bizzarres Mr. J. Booth exhibited a promising flower. In scarlet flakes Mr. B. Simonite, Mr. J. Booth, and Mr. J. Fletcher, exhibited promising flowers. In rose flakes Mr. B. Simonite exhibited a large flower with fine petal, but this variety will perhaps come somewhat short of colour in fine seasons; and Mr. Gorton also exhibited a promising flower. In purple flakes Mr. B. Simonite exhibited a fine flower; Mr. John Fletcher also staged a fine large flower in this class. In seedling Picotees there was nothing striking, the best were those exhibited by Mr. B. Simonite and Mr. John Fletcher. Miss Chadwick, which was certificated at a former exhibition of the Society, was not nearly so good as when exhibited at that time.

In the classes for six dissimilar varieties not one stand was exhibited, and several of the small growers stated that they would not have a flower for a fortnight. Mr. Rudd's plants will not be in full bloom for three weeks. Mr. Lord of Todmorden, whose situation is very late, has no flowers expanded. Mr. Gorton exhibited a stand of self flowers which deservedly obtained an extra prize. Selfs no doubt will become a feature in our northern shows as they are in the southern, and the ladies generally seemed to admire them the most. The flowers were of high merit, not saw-edged as are frequently to be met with in stands of selfs. Appended are the awards of the Judges.

Class A, twelve Carnations dissimilar.—First, Mr. B. Simonite,

Rough Bank, Sheffield, with seedling *R.F.*, large; seedling *a.m.*, Dr. Foster, very fine; James Taylor, Mayor of Nottingham, seedling *a.b.*, extra fine; Squire Meynell, J. D. Hextall, Sportsman, seedling *a.b.*, extra bright and fine in colour, with a good petal; and Dan Godfrey. Second, Mr. J. Booth, Failsworth, near Manchester, with Lord Napier, Squire Meynell, seedling *c.b.*, Clipper, nice; seedling *a.f.*, large and fine; True Briton, seedling *a.f.*, Admiral Curzon, Fanny, Mayor of Nottingham, and John Keet. Third, Mr. George Rudd, Undercliffe, Bradford, with Mercury, extra large; Sybil, Sarah Payne, seedling *p.f.*, Dr. Foster, Marshall Ney, fine; Lord Milton, Admiral Curzon, extra fine; John Keet, James Taylor, Mr. Battersby, fine. Fourth, Mr. Thomas Mellor, Ashton-under-Lyne.

Class B, twelve Picotees dissimilar.—First, Mr. Booth, with Miss Wood, William Summers, very good; Countess of Errol, Mrs. Keynes, Picco, Clara, Medina, fine; Miss Sewel, Miss Horner, very fine (selected for premier); Alice, Mrs. Lord, fine; and Lord Valentia, extra fine. Second, Mr. B. Simonite, with Miss Wood, Ann Lord, seedling *h.r.*, Mrs. May, Picco, Violet Douglas, Fanny, Teresa, very good; Juliana, Mrs. Allcroft, Mary, and seedling *l.r.* Third, Mr. George Rudd, with J. B. Bryant, Obadiah, Rev. F. D. Horner, Miss Wood, Jessie, Master Norman, Zerlina, seedling *h.r.*, Norfolk Beauty, Mrs. Fuller, very good; and Isabella.

Class C, twelve Carnations, not less than nine dissimilar varieties.—First, Mr. R. Gorton, Eccles, near Manchester, with John Keet, extra fine (afterwards selected as premier Carnation); James Douglas, Mars, Sybil, James Taylor, Dr. Foster, J. D. Hextall, very fine; Admiral Curzon; Sarah Payne, good in colour; and Garibaldi. Second, Mr. John Fletcher, North Brierley, near Bradford, with seedling *p.f.*, very large; Sybil, Sarah Payne, seedling *p.f.*, large; Admiral Curzon, fine; Dr. Foster, Mars, Sportsman, J. D. Hextall, Lord Raglan, very good; and Clipper. Third, Mr. William Slack, Chesterfield, with Lady Ely, Mars, Sarah Payne, extra good; James Taylor, Mayor of Nottingham, Unknown *a.f.* (like Flora's Garland), Dreadnought, James Douglas, and Squire Meynell. Fourth, Mr. Joseph Chadwick, Dunkensfield. Fifth, Mr. James Sharp, Perry Bar, Birmingham. Sixth, Mr. C. Auckland, Chesterfield.

Class D, twelve Picotees, not less than nine dissimilar.—First, Mr. R. Gorton, with Miss Horner, fine; Mary, Miss Wood, Rosy Queen, Her Majesty, Purity, Emily, Mrs. Lord, Rev. J. B. M. Camm, Juliana, and Princess of Wales. Second, Mr. John Fletcher, with Obadiah, Alice, Brunette, Rev. F. D. Horner, seedling *l.p.*, Master Norman, J. B. Bryant, seedling *h.r.*, Miss Lee, Zerlina, Miss Wood, and Morna. Third, Mr. Slack, with Violet Douglas, Mrs. Small, Miss Horner, Mrs. Allcroft, Fanny Helen, and Juliana. Fourth, Mr. Thomas Mellor; fifth, Mr. James Sharp; sixth, Mr. C. Auckland, Chesterfield, with nearly all seedlings. Seven stands were exhibited in this class. A special prize was awarded for a stand of twelve selfs exhibited by Mr. Gorton. Class E, six dissimilar Carnations, and Class F, six dissimilar Picotees.—None were exhibited, most probably owing to the lateness of the season.

Classes for single blooms.—*Scarlet Bizzarres*.—First, Mr. G. Rudd, with Admiral Curzon; second, Mr. John Fletcher, with the same variety; third and fourth, Mr. B. Simonite, with Mercury and Admiral Curzon; fifth, Mr. Fletcher, with Admiral Curzon; sixth, Mr. B. Simonite, with Dreadnought. *Crimson Bizzarres*.—First, Mr. R. Gorton, with J. D. Hextall; second and fourth, Mr. Simonite, with the same variety; third, Mr. G. Rudd, with Captain Stott; fourth and fifth, Mr. John Fletcher, with J. D. Hextall; sixth, Mr. J. Booth, unknown. *Pink and Purple Bizzarres*.—First and second, Mr. B. Simonite, with James Taylor; third and fifth, Mr. Slack, with Sarah Payne; fourth and sixth, Mr. R. Gorton, with James Taylor and Sarah Payne. *Scarlet Flakes*.—First, Mr. John Fletcher, with seedling (good); second, fourth, and fifth, Mr. J. Booth, with two blooms of Sportsman, and Pilot; third, Mr. G. Rudd, with James Cheetham; sixth, Mr. R. Gorton, with Clipper. *Rose Flakes*.—First and second, Mr. B. Simonite, with seedlings; third, Mr. R. Gorton, with James Merryweather; fourth, Mr. T. Mellor with the same variety; fifth, Mr. J. Chadwick, with John Keet; sixth, Mr. G. Rudd, with Maid of Athens. *Purple Flakes*.—First and fourth, Mr. Simonite, with Dr. Foster and Squire Meynell; second and sixth, Mr. R. Gorton, with Dr. Foster and Squire Meynell; fifth, Mr. J. Booth, with Dr. Foster. *Heavy Red Picotees*.—First, second, and sixth, Mr. G. Rudd, with two blooms of J. B. Bryant and Morna; third and fifth, Mr. John Fletcher, with J. B. Bryant; fourth, Mr. J. Booth, with Lord Valentia. *Light Red Picotees*.—First and third, Mr. B. Simonite, with Violet Douglas; second, Mr. John Fletcher, with Thomas William; fourth and fifth, Mr. J. Booth, with Clara; sixth, Mr. G. Rudd, with Thomas William. *Heavy Purple Picotees*.—First and third, Mr. J. Chadwick, with Miss Chadwick; second, Mr. Sharp, with Emily; fourth, Mr. B. Simonite, with Mrs. May; fifth, Mr. C. Auckland, with a seedling; sixth, Mr. J. Booth, with Pilot. *Light Purple Picotees*.—First and fifth, Mr. J. Booth, with Ann Lord and Alice; second, Mr. B. Simonite, with Ann Lord; third, Mr. R. Gorton, with Cynthia; fourth, Mr. Sharp, with Crystal Palace; sixth, Mr. T. Mellor, with Mary. *Heavy Rose Picotees*.—First and fourth, Mr. R. Gorton, with Miss Horner and Rosy Queen; second, Mr. T. Mellor, with Mrs. Ford; third Mr. George Rudd with a seedling fifth and sixth, Mr. John

Fletcher, with Rev. H. Matthews and Edith Dombrain. *Light Rose or Scarlet Picotee*.—First and fifth, Mr. J. Booth, with Miss Wood and Bertha; second and sixth, Mr. B. Simonite, with Miss Wood and Mrs. Allcroft; third and fourth, Mr. T. Mellor, with Miss Wood.

Premier Carnation.—Mr. R. Gorton, with John Keet. Premier Picotee.—Mr. J. Booth, with Miss Horner.

### POTATO CULTURE—SMALL SETS.

PLANTING a large piece of ground each year with Potatoes for domestic use, I have often been surprised at the size of seed Potatoes thrown aside when preparing the sets, and I have been oftentimes assured that planting small Potatoes is only a waste of time and ground. This year I tried the following experiment: I picked out 120 Potatoes of the size of marbles, weight 1 lb. I saw them planted 4 inches apart on the 18th March, and on the 18th August I saw them dug up. There were 454 Potatoes in number, of which 220 were fit for use or sale; 100 were of the size of pigeon's eggs; 106 small marble size, or like the original sets; 28 diseased. Variety, *Myatt's Prolific Ashleaf*.

Last November a gentleman gave me a specimen Potato like Paterson's Victoria, but with a more silvery skin; it weighed 3½ ozs. I divided it into four pieces which were planted 12 inches apart. Produce, forty good size Potatoes and four small tubers; weight 6 lbs. No disease.—H. C.

### HALLAMSHIRE FLORAL AND HORTICULTURAL SOCIETY.—AUGUST 20TH AND 21ST.

THE twelfth annual Exhibition of this Society was held on the above dates at Ransmoor, Sheffield, in a field lent for the purpose by Mark Firth, Esq., who also kindly allowed his gardens and greenhouses to be thrown open to all those visiting the Show. The weather was very unfavourable to the Show proving a financial success, as rain continued falling during the greater part of the time the Exhibition remained open to the public. The quality and quantity of the exhibits were, with some few minor exceptions, quite equal to those in previous years.

The large tent devoted to the gentlemen's gardeners' classes contained some fine collections of stove and greenhouse plants, and presented a very attractive appearance. In the class for six stove or greenhouse plants Mr. T. Shelley, gardener to Mrs. Hobson, was first with a very fine group, the principal features of which were good specimens of *Ixora coccinea* superba and *Bougainvillea glabra*, and also an excellent *Millettia speciosa*. In this same class Mr. Stephens, gardener to Sir John Brown, and Mr. Walker, gardener to B. P. Broomhead, Esq., also exhibited; Mr. Stephens staging two remarkably large and well-flowered plants of *Hydrangea hortensis*, some good specimen Palms, and a fine *Croton interruptus*. Mr. Walker brought *Allamanda Hendersoni* and *Clerodendron Balfourianum*, both very fresh and finely bloomed.

Ferns were well shown and in large numbers, principally by the same exhibitors as before named. Mr. Walker brought a grand specimen of *Adiantum farleyense*, such as has rarely been equalled at any show. *Fuchsias* and *Zonal Geraniums* were shown in good condition by Mr. T. Fogg, gardener to Mrs. G. Wilson, who, as is usual with him, was first in each of these classes. His style of growing these plants is greatly in advance of what we usually meet with in provincial shows.

Fruit was shown in excellent condition by Mr. J. Keeling, gardener to D. Ward, Esq. (the Mayor). His black and white Grapes were splendid, and attracted much attention. Some good Peaches were staged by Mr. W. Stephens. Vegetables were good throughout, especially Cauliflowers, Peas, Potatoes, Turnips, Cucumbers, and Tomatoes.

The tent occupied by the amateurs and cottagers was remarkable for the number of very fine collections of hardy and British Ferns exhibited by the amateur growers. Mr. J. Eadon, who held the premier position in this class, is the Chairman of the Show Committee, and he has been for many years past a very successful and enthusiastic cultivator of hardy Ferns, and the example set by him seems to have induced many more amateur growers to take up the cultivation of these plants.

The absence of one of the best fruit cultivators in this neighbourhood (Mr. D. Abbot, gardener to C. H. Firth, Esq.), who has in former years almost invariably occupied the foremost position in most of the fruit classes, was much regretted. It appears that his employer has from some cause taken an objection to exhibiting, which is unfortunate, as the fine examples of fruits each year presented by his gardener did much to stimulate other gardeners to greater exertions, and to promote a healthy feeling of rivalry and competition.

WALTHAM CROSS VINE.—I have had one in full bearing for three years, but it is far from satisfactory. The bunches

are a splendid length, but not one-half of the berries attain their full size, and if these were cut out the bunch would be a miserable object. Do those who are acquainted with this Vine advise me to grow it on or replace it by a better?—A. K. C.

### SLUGS AND SNAILS.

SLUGS have been exceedingly troublesome this year. I have heard it said that the former are not so numerous after a severe winter. I have doubted the correctness of that assertion for some time past, and now I am quite convinced it is wrong. In a severe winter they descend farther into the ground, and there remain in safety; but in mild winters come to the surface occasionally, and are killed by sudden frosts. Snails, I believe, are reduced by a severe winter, at least I find such to be the case.

I had two rows of Sangster's No. 1 Pea quite destroyed by slugs this season, although I dusted them well with lime on several occasions; they seemed eaten below the ground as well as above, and other Peas were much injured, whilst a neighbour had not a Pea touched. He had a fancy that salt was a good manure for land, and gave a dressing to all his land (which was uncropped) and dug it in. Whether it did much good as a manure I cannot say, but it had a most beneficial effect, for he had not a slug in his garden. The quantity of salt used was just enough to cover the ground, as though there had been a slight fall of snow. I shall certainly adopt the plan next spring, but it is necessary to be careful when the land is cropped.—AMATEUR, Cirencester.

If it had not been for the sluggishness of my newsman I should have acknowledged last week the kind responses of your correspondents "G. H. V.," "W. J. M., *Clonmel*," and Mr. C. P. Peach.

"G. H. V." recommends plovers with their wings clipped, but how can I keep them in a garden which is not walled in on all sides? "W. J. M." advises me to procure a clutch of ducklings. Years ago I did that, and found them of great service, especially under my Gooseberry bushes; but they wanted some salad and dessert after their meal, and consumed a quantity of young Lettuces and Strawberries when I thought they were enjoying their *sicsta*, as the Spaniards call the pleasant slumber after a sumptuous meal.

The ducklings were especially useful under my Gooseberry bushes. When I scratched with a rake the soil under a Gooseberry bush as deep as I could the ducklings went at it, or at what they found in it, sitting down round the tree. I repeated the operation to other Gooseberry trees. The result was that before I had done ten trees the ducklings said, as plain as ducklings could speak, "their programme was full." They enjoyed it, and did good, for there was not a single caterpillar on those bushes the following season. But to return to the slugs. I have been trying some experiments. I exhibited, as our doctors say, a mixture of creosote and water. It evidently was disagreeable to both slugs and snails, and killed the smallest.

I have made further experiments with nitrate of soda, and think it may be used with "killing" effect considerably diluted. Have any of your readers tried a solution of nitrate of soda and water? Say how many ounces to thirty gallons of water. Will Mr. C. P. Peach kindly inform me what proportion of carbolic acid, solid or in a diluted form, to mix with, say, ten, twenty, or thirty gallons of water? I have found 2 ozs. mixed with thirty gallons of water very useful for bringing worms to the surface of a lawn; if stronger it killed them, or more probably merely paralysed them below the surface, for they came up as strong as before a few hours after. The diluted dose appeared to disagree with them, but they came to the surface and were left to the mercy of the gardener. Which is the best—a strong solution to kill the slugs below the surface, or a weaker one sufficient to compel them to come to the surface to be killed? Can any of your readers tell me the result of gas lime, and what weight of it to lay on a given area?—G. O. S.

ROSE VERTE, OR GREEN ROSE.—About fifteen years ago, when I was at New Orleans, United States, I saw in several gardens a Rose in flower the blooms of which were of a pure green colour. The flowers were about the size of those of *Aimée Vibert*. It was considered a curiosity, but not a rarity. Unfortunately I could not bring either a plant or cutting, for I was on *revue* for a long tour through Texas and the other



Southern States; but if any of your readers wish to have plants of it I have no doubt it can easily be obtained from some of the florists there. In no part of the world have I ever seen Tea Roses growing so luxuriantly and flowering so gloriously as in the neighbourhood of New Orleans.—G. O. S.

#### PARAFFIN—NEWTON'S SEEDLING STRAWBERRY.

In reply to Mr. William Taylor's recommendation of paraffin as an insecticide I must repeat that paraffin is not soluble in water, as I have proved by trying it both with hot and cold water, soap, &c. As to his caution not to let the sun touch plants while wet with it, I would ask—How is this to be prevented if it takes a whole day, or two whole days, for the sticky oily substance (I use Mr. Taylor's own words) to dry? In this gloomy season we have plenty of sudden bursts of sun, which in my light houses would very soon destroy any tender leaf touched with paraffin. But why use paraffin at all? Carbolic acid is soluble in water, and mixed with soft soap and a little brimstone will destroy thrips, red spider, or any other insect pest. Where mealy bug exists the best remedy is methylated spirits applied with a camel's-hair brush, or better still methylated spirits mixed with turpentine and water, and syringed off afterwards with pure water.

In answer to "AN OLD GROWER" I do not quite know the origin of Newton's Seedling Strawberry, but it quite corresponds to his description. I had it from Mr. Harcourt's garden at Whitwell. The quality, as far as flavour is concerned, is not particularly good, but it is very firm, produces very good-looking fruit, and some very fine, but its great merit is its prodigious bearing qualities. I cannot endorse your correspondent's remarks on the method of growing Grove End Scarlet. It is no use going back to inferior methods, nor is there any necessity for so doing.

The suggestion of "G. O. S.," of using straw bottle holders and masons' laths, is good in its way, but the plan would not do on a large scale. Nothing is simpler than chopped straw for protecting the fruit.—C. P. PEACH.

#### ROYAL WESTERN HORTICULTURAL SOCIETY.

PLYMOUTH.—AUGUST 19TH AND 20TH.

THE forty-second annual summer display of this popular Society was held in the Hoe Park, Plymouth, on the above dates, and, as it was remarked at the Judges' dinner, the Society never had a better exhibition and worse weather. It rained incessantly on the first day, and the visitors were so few as to almost dishearten the hard-working executive; but on the second day the weather improved, and the visitors flocked in such numbers that in the evening the tents were crowded, and several pounds in advance of last year were taken at the gates.

The exhibits were arranged in four large marquees, the schedule consisting of eighty-nine classes besides several special prizes. The principal class (open) was for twenty specimens of stove and greenhouse plants, half in flower, three exhibitors competing. The first prize was awarded to Mr. Cole, gardener to J. Lawless, Esq., St. Leonard's, Exeter; the second to Mr. Salway, gardener to H. B. Mildmay, Esq., the President of the Society; and the third to Mr. Rowe, gardener to F. Parkin, Esq., Exeter, all exhibiting well. Mr. Cole also took the borough Members' prize for twelve stove and greenhouse plants, and was also fortunate in obtaining several other first prizes—namely, for six Ferns, for a single specimen foliage plant with a magnificent example of *Oroton Disraeli*, for a greenhouse plant with a large *Phormium tenax variegatum*, for a Fern with *Davallia Mooreana*, and for a single Heath with a fine plant of *Erica Jacksoni*.

In the class for six stove and greenhouse plants Mr. Rowe occupied the first position, although followed very closely by Mr. C. Warren, gardener to J. Bulteel, Esq., Pamphlete. Mr. Salway and Mr. Brighton, gardener to the Earl of Mount Edgcumbe, exhibited excellent groups of stove and greenhouse decorative plants. Balsams, Fuchsias, Coleuses, and Mignonette were all exhibited largely and well. Good *Achimenes* came from Capt. Tolcher; while Messrs. Hender & Sons staged a splendid collection of their fine *Amaranthus Henderi* and Princess of Wales, besides the newer varieties of *Coleuses* in fine condition. Mr. Laing of Forest Hill exhibited a collection of *Tuberous Begonias*, which were very much admired.

The display of fruit was very good, and the vegetables were excellent. Mr. Dillon and his staff are to be congratulated on their success.

**THUJA LOBBI AS A HEDGE PLANT.**—At St. Fagan's Castle, near Cardiff, there is a maze of considerable extent, the hedges of which are formed of this *Thuja*, and it certainly

makes the prettiest hedge of any evergreen I ever saw. It is kept closely cut, is about 4 feet in height, and its delicate green colour and pleasing surface point it out as being suitable for making hedges of the most ornamental description.—M.

#### CARNATIONS AND PICOTEEES.—No. 8.

AUGUST.—When present at the National Show, southern section, I was so happy as to become introduced to Lady —, who spoke most enthusiastically of the Carnation and Picotee. From what she said I am inclined to think that many are in the same predicament as she is. She informed me that she purchased her plants in April, "packed up nicely as Cabbage plants are." The gardener also planted them carefully, and the result was no growth and no bloom. I will endeavour to describe how to have a good bloom in the open ground.

In the first place, if you have cold frames for wintering the plants in, autumn is the best time to procure them, say about the middle of October, when two plants should be placed in a pot 4 inches wide, the plants near the edge of the pot. The best compost for them is maiden loam (if strong mix some sand) with a small proportion of leaf mould and charred refuse. Drain the pots well to enable the water to pass away freely, otherwise the soil would become sour. Water with a rose immediately after potting; when the foliage is dry close the frame for a few days until the plants begin to emit fresh roots, when all the air possible should be given them, only keeping off the drenching rains. From this time until planting time they will require very little attention except protection in bad weather, and if very frosty, as last winter, covering the frames with a few mats; but at all times endeavour to provide a circulation of air through the frame some time during the day. At the end of February the plants should have a thorough cleaning, removing all dust and dead ends from the foliage. If the weather is open and the plants are dry give a good watering when growth commences. About the middle of March if the weather is fine the plants can be placed out in the beds or borders as required; after this they will only require ordinary attention, bearing in mind that a poor soil will give a poor bloom and *vice versa*.

Those who have not convenience for wintering the plants will find it best to arrange with some grower, so as to have the plants in pots from him when wanted at planting time. Bear in mind only to deal with respectable dealers, otherwise the plants may prove to be anything but what was expected. The bloom from the plants will generally consist of only one spindle (flower stem) per plant, some varieties excepted bearing four to six flowers. Where large blooms are wanted thin the buds down to two or three on each stem.

With regard to after cultivation see the monthly notes given in the Journal on the cultivation of plants in beds. Some varieties are very liable to have burst pods, and it should be the endeavour of the cultivator only to procure such sorts as are not given to bursting.

**WORK FOR THE MONTH.**—Push forward the layering as fast as possible. Even in late districts, although the flowers may not yet have shown colour, layering had better be done at once, although there is no doubt that in many cases the stems will be too brittle for layering in the ordinary way. The only plan that can be adopted with safety is to layer a joint or two nearer the plant than in ordinary seasons. The result will be that the layers will be long, but this is better than having them badly rooted or not rooted at all, which might be the case if the operation be deferred. When layering before the plants are in flower it will be necessary to keep the layers belonging to each plant all together, so that if a plant proves to be out of colour the layers from it can be kept clear from the general stock, as many sorts when once run never come back to the florist type, although the plants may be grown for years.

All good flowers not required for exhibition purposes should be crossed for seed, keeping the bees from them until you are satisfied that impregnation has taken place, when a few of the petals should be extracted to give room for the swelling of the seed vessel, also splitting down the side of the calyx to its base and removing one of the segments from the lowest side, so as to prevent any water from lodging inside. As the tips of the calyx turn yellow and the seed vessel pushes forward they may be shortened, extracting the petals one by one as they decay, taking care not to injure the seed vessel whilst doing so. Bear in mind not to fertilise the flowers after the plants are layered, as it is very rare that any seed will be

produced. Pay attention to the watering of the layers in dry weather, as they are easily affected if the weather proves dry, the roots of the plants in this stage being so near the surface.

**Plants in Beds.**—The same rule applies to them as to those in pots, only before commencing to layer it is a good plan to give the ground a thorough watering with lime water, which will generally destroy those small black slugs which are so troublesome to the cultivator. When grown in beds there is no necessity to layer all the growths, only peg them down to prevent the winds from breaking them off. The plan they adopt in the north when layers are not particularly wanted is to layer just a few of the plants that are full of young growth. These are removed when rooted, whilst the old stool is grown on through the winter, with the result that few of them are ever lost in the winter months, whilst being so strongly established they produce splendid bloom the following season after being cleaned and top-dressed in March. When the flowers are grown in this manner they call it growing them on the bush.

**Seedlings.**—Those who intend wintering these in the open should plant at once; but if intended to be wintered in frames they may remain in the boxes until October, when they ought to be placed in small pots (4 inches diameter), one or two plants in each according to the size of the plants. Any seedlings which may have bloomed in the open ground and possess exceptional merits may now be taken up, potted, and in a day or two layered. My friend Mr. Dodwell tells me that he layered all his seedlings last year in pots and did not lose one. To those who are infirm or too ponderous for ground layering it is a great boon to be able with certainty to propagate them in this manner.—GEO. RUDD.

### THE DAMASK ROSE.

On the 31st July you inserted a letter from me in reference to the early history of the old double yellow Rose. I have since come across a passage relating to that of the Damask Rose, which I venture to send to you. It occurs in Lord Bacon's "*Sylva Sylvarum*," century vii., par. 559 (see Bohn's edition of Bacon's works, 1854, vol. I. p. 155):—"The coming of trees and plants in certain regions and not in others is sometimes casual, for many have been translated and have prospered well, as Damask Roses that have not been known in England above a hundred years and now are so common." This extract is taken from a work written in the last five years of Lord Bacon's life, and consequently would carry back the introduction of the Damask Rose to some date between the years 1521 and 1526 A.D. The statement itself may not be sufficiently exact to establish the point, but Lord Bacon's habit of accuracy and his love of horticulture give it a distinct value. Haydn ("*Dictionary of Dates*," edition 1873) assigns 1543 as the date of introduction of this variety from southern Europe, but I know not upon what authority.

Besides the Damask Lord Bacon mentions in other places three more varieties of Rose existing in England about 1597—viz., single and double Musk Roses and red Roses (see Essay xiv. of *Gardens*, &c.). I cannot identify the latter; possibly it was the emphatic style by which in Lord Bacon's days the Rose dedicated to the Lancastrian party was still known. Can any of your readers solve the point?—J. FREDERICK HALL.

### THE DEATH OF MRS. VEITCH.

We regret to announce the death of Mrs. Veitch, of Stanley House, Chelsea, widow of the late Mr. James Veitch, the former proprietor of the great nursery business with which the entire horticultural world is familiar. During the lifetime of her late husband Mrs. Veitch was well known to many who visited the establishment, and from the decease of Mr. Veitch in 1869 was the proprietress of the business together with her sons, Mr. Harry and Mr. Arthur Veitch. The deceased lady, whose loss is mourned by many beyond her family circle, had for a considerable time been in failing health, in consequence of which she had lately with her daughters been staying at Eastbourne, where she quietly and peacefully passed away on the 22nd inst., aged sixty-two years. By her removal an estimable family loses an honoured head, the numerous employees of the firm a real friend, and many a needy sufferer in the district a practical benefactor. Even far beyond what may be termed her home district Mrs. Veitch in a quiet manner rendered aid to many worthy objects, and she will be remembered for her wide sympathy with distress in every form, and her far-reaching

generosity. Besides her two sons the deceased lady leaves five daughters. The funeral took place yesterday (Wednesday) in the Brompton Cemetery, and was attended by a large number of sorrowing friends.

### WORK FOR THE WEEK.

#### MUSHROOM HOUSE.

MUSHROOM beds for affording the winter supply must be formed without further delay. The most suitable materials are horse droppings direct from the stables. It is a capital plan to place a wheelbarrow under cover in such a position that the droppings can be placed in it. This, however, is not always practicable, in which case the shaking over of stable litter during dry weather should be continued until sufficient material is secured. The straw particles not only increase the bulk but aid in drying it and maintain the bed in a fresh state for a lengthened time. Expose the manure if possible in an open shed to dry, and when only sufficient moisture can be observed in it under pressure from the hand as will admit of its being beaten into a compact mass it is ready for making up. If the beds are formed on shelves make them not less than 12 inches in depth, and they need not exceed 15 inches, beating the material very firmly so as to retain the heat, or it may be placed into the beds loosely to a depth of about 8 feet, allowing it to remain so until a gentle warmth is generated, then tread and beat it down as firmly as possible. When the temperature of the bed is steady at 75° make holes about 9 inches apart every way, and insert firmly in each a piece of spawn about 2 inches square, and cover about an inch deep and beat the bed well over. In the course of a week or ten days the bed may be covered with about 2 inches of turfy loam of such a texture and moisture as can be beaten into a firm mass. In about six weeks the Mushrooms will make their appearance, when it will be necessary to keep the surface of the bed moist by sprinklings as necessary, avoiding overwatering.

#### FRUIT HOUSES.

**Figs.**—In the earliest Fig house the trees will now be ripening their wood, and watering may be discontinued, air being admitted very liberally. If, however, the second crop is not yet ripened moderate moisture in the soil will be necessary with a rather free circulation of warm air to insure high quality in the fruit. We prefer placing trees in pots out of doors if the wood be ripe, but the season is so exceptional that the cultivator will require to exercise his judgment; in either case encourage surface roots by a top-dressing of decayed manure or crushed bones. In Fig houses where the trees grow too strong, producing fruit very indifferently, it is sound practice to circumscribe the roots, confining them to borders about 8 feet in width. If the bottom be well drained a top-dressing of rich turfy loam may be given after the root-pruning, with about a tenth of old lime rubbish and a sprinkling of bone dust; but if the border be not well drained or is too rich it will be preferable to lift the trees as soon as the leaves show indications of falling, root-prune them and replant in good soil. For drainage employ broken bricks and old lime rubbish about a foot deep, mixing about a tenth of the latter with good turfy loam and a twentieth of crushed bones. The soil should be well rammed in about the roots. So much pruning or stopping of the growths will not be required as when the trees are growing in wide borders.

**Vines.**—The weather is extremely unfavourable for the ripening of late Grapes, the borders being saturated with moisture outside, resulting in an undue amount of lateral growth and the swelling of the berries to an unusual size. Keep the laterals well thinned, and thereby admit as much light as possible to insure the finishing of the crop, not by large reductions of foliage at a time, but by frequent pinchings. Where spare lights are at hand employ them to throw off heavy rains and to secure greater warmth to the soil. This will not only assist the present crop to finish satisfactorily, but will help to secure the ripening of the wood. Fires will be necessary to maintain a night temperature of 70° to 75° at night and 80° to 85° by day, accompanied with a free circulation of air night and day, as it will require sharp firing to finish off late Grapes before the days are too short to admit of its continuance; indeed more may be done in the next six weeks than in twice the time later on. Those Grapes well advanced in ripening may have the atmospheric moisture gradually reduced; those only colouring should have a moderate amount of moisture to assist their swelling, not neglecting the inside borders for water as may be necessary. Late Grapes are so backward that without extra attention to firing and ventilation they will never ripen. Vines from which the Grapes have been cut must not be overlooked. All laterals should be closely stopped, and a dry warm atmosphere maintained to secure the thorough maturation of the wood, preserving the old leaves as long as possible, giving an occasional washing with the engine on fine evenings to free them from red spider. Grapes hanging should have a circulation of dry air secured to them by gentle firing as may be necessary during the day only, examining the bunches frequently for shanked or decayed berries.

**Peaches and Nectarines.**—The fruit in the latest houses will



require artificial heat, and the watering at the roots must only be moderate, though sufficient to maintain the foliage in a healthy state. Much gross wood is being made by trees in late houses. Laterals must be stopped, as that is preferable to removing many shoots, which might cause other buds to start into growth. As trees in succession houses become cleared of fruit thin out all shoots not required, in order that they may have the benefit of all the sun and air possible to thoroughly mature the wood, going over the trees with the garden engine to cleanse them as far as possible from red spider, not neglecting the inside borders for water. Gentle fires will be advantageous, where the wood is strong and the situation cold and damp, for securing matured growth.

**Pines.**—Suckers from the summer-fruited plants will soon need repotting, shifting the strongest into their fruiting pots as soon as they are ready, affording the plants a position near the glass in a light airy house where they are kept gradually growing during the winter months. They start readily in May or June, and yield a supply of fruit for early autumn use. The remainder of the plants may be wintered in 7 or 8-inch pots, and transferred to the larger size pots in spring, and with strong suckers of Smooth-leaved Cayenne and Charlotte Rothschild started last March will provide a succession of fruit throughout the winter months, aided by Queens and other varieties which were started at the same time. About this time it will be necessary to effect a rearrangement of the plants that were started last autumn. Many of the free-fruited kinds will have fruit swelling off, and such plants should be separated from those not now in that condition, but which have completed the growth. These plants will more readily start into fruit at the required time if subjected to freer ventilation for the next six weeks than if kept in an atmosphere conducive to growth; therefore ventilate freely when the temperature of the house exceeds 80°, with a mean of 80° at the roots. Where fruit is swelling off keep the air moderately supplied with moisture, admitting a little air early in the morning to promote evaporation before the sun's rays fall directly on the fruit. Ripe fruits required to be kept should be removed to a shady house having an abundant supply of air.

**Orchard House.**—Apriots are fully a month late in ripening. The midseason Peaches are usually about this time fully ripe, but excepting the very early varieties, such as Early Beatrice and Early Louise, none have as yet ripened. All fruit trees whether in pots or planted out should be kept somewhat drier when the fruit is approaching maturity, but the moisture at the roots must not be so reduced as to affect the foliage, and syringing must cease. It is desirable to place trees with the fruit ripening together in a part of the house by themselves, so that those not in that condition may be syringed as required, whilst the others are kept dry. Although abundance of air is advisable when the fruit is ripening a departure must be made from the rule this season, otherwise many fruits will never ripen perfectly; therefore continue to close the ventilators early in the afternoon; 85° or even 90° from sun heat will do no harm, provided air has been given in the early part of the day and a little is again admitted at night to prevent a stagnant or vitiated atmosphere. Little pinching or stopping of shoots will now be required, although gross shoots may occasionally be developed, and they should be stopped or removed altogether. As the fruit is removed from the trees they will require to be repeatedly syringed to free the foliage of insect pests, and waterings at the roots must be given as required to maintain the leaves in good condition.

#### FLOWER GARDEN.

The early summer was particularly unfavourable to the development of flowers on such plants as Pelargoniums, and the growth of the more tender plants employed in the subtropical garden and elsewhere has likewise been retarded. Although the summer has been so unfavourable to the class of plants ordinarily employed as summer bedders, herbaceous plants have been unusually attractive, and it is much to be regretted that the modern system of flower gardening has caused encroachments to be made on the mixed border almost to the extent of pushing so interesting and beautiful a class of plants out of cultivation. Mixed borders of various flowers afford far more satisfying pleasure to the real lover of flowers than masses of colour. In seasons like the present much might be written in favour of carpet bedding; the plants employed are bright and very effective. The propagation of bedding plants should now be pushed on as fast as possible. Insert Pelargonium cuttings at once, as the earlier they are struck the safer they will pass the winter. A few store pots or pans of Verbenas, Lobelias, Heliotropes, Ageratums, &c., will, if safely wintered, afford an abundant supply of cuttings in spring, and plants propagated in spring of those and similar plants are preferable to older plants.

#### PLANT HOUSES.

**Greenhouse.**—The latest-flowered Pelargoniums should now be cut down as advised for the earlier plants, allowing them to become dry previously, placing them at once in a pit or frame. The earliest cut down plants must be shaken out before the shoots are too far advanced, or the reduction of their roots will give a check to the after growth. Reduce the roots considerably in the case of old plants that are as large as desired; but any that are small

need not have the roots reduced so much. Pot in turfy loam, adding about a sixth of well-decayed manure, thoroughly incorporating sufficient sand to keep the soil open. Pelargoniums can hardly be potted too firmly; place the plants near to the glass in a light pit or house, syringe every afternoon, and afford plenty of air. Old plants of Cyclamens should be turned out of the pots and have the drainage rectified if defective.

#### TRADE CATALOGUES RECEIVED.

James Carter & Co., 287 and 288, High Holborn, London.—*Illustrated Catalogue of Bulbs and other Plants.*

Sutton & Sons, Reading.—*Illustrated Bulb Catalogue and List of Plants and Seeds.*

B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London.—*Catalogue of Bulbs, Fruit Trees, and Roses.*

Osborn & Sons, Fulham.—*Catalogue of Hyacinths and Tulips.*

Daniels Brothers, Norwich.—*Illustrated Bulb Catalogue.*

Hooper & Co., Covent Garden, London.—*Catalogue of Bulbs.*

Dickson & Robinson, 12, Old Millgate, Manchester.—*Catalogue of Bulbs and Roses.*

Stephen Brown, Weston-super-Mare.—*Catalogue of Bulbs and other Flowering Plants.*

Louis Van Houtte, Ghent, Belgium.—*Catalogue of Rhododendrons and Azaleas.*

#### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

**YELLOW PLUMS FOR SOUTH-WEST WALL (H. T. C.).**—The Jefferson Plum will probably suit you. The tree is a free grower and good bearer, and the fruit is large and of excellent flavour.

**POTATOES DECAYING (J. B. Berke).**—Your Ashleaf Potatoes are, we fear, like those of many others, smitten with the murrain. We know of no better means of arresting the disease than spreading the tubers out thinly in a very dry place. Some gardeners dust the Potatoes with lime, which may be useful in drying up excessive moisture.

**BUDDING ROSES (D. Jenks).**—Provided the bark of the Briar or Manetti stocks "runs" freely you may insert the buds now. We have budded many Roses in September successfully. The buds remain dormant until the spring and then grow strongly. The buds starting now are very liable to be destroyed, as the growth cannot be matured before winter.

**PRACH TREE OVERCROWDED (A Young Gardener).**—You may cut out some of the strongest growths at once, so that those that are of medium strength, shorter jointed, and which give promise of forming fruit buds plentifully, may have more light and air to mature them. If the tree is very luxuriant we should lift it, or at any rate root-prune it, raising some of the more fibrous roots and placing them near the surface in fresh soil, pressing the soil very firmly. You may do this at once, and if bright weather should follow you can easily shade the trellis for a few hours as required to keep the foliage fresh until fresh roots are produced.

**INCREASING PANSIES (Suburban).**—As the season has been so dull and wet you will probably find that the young growths issuing from the stems of the plants have roots at the base. These rooted side shoots should be slipped off when they are about 2 inches in length and planted in a bed in a rather shaded position but not under trees, and you will soon have healthy young plants. Side shoots that have not rooted well, if inserted in very sandy soil and protected with a handlight, emit roots readily if the cuttings are shaded for a time and kept moist. They must be taken off and inserted when quite young and fresh, for if their stems are hollow and flowers are showing very few of the cuttings will strike.

**WINTERING COLEUSES (L. A. Bradford).**—You cannot preserve Coleuses in a greenhouse having a minimum temperature of 40° in the winter. They are stove plants and require a temperature of not less than 55° to winter them successfully. As the varieties you have purchased are good, and as your means for preserving them are so inadequate, you had better ask a neighbouring gardener having a plant stove to accept a few cuttings now. These will strike readily, and will not take up much room in the winter, and will afford an ample supply of cuttings for spring propagation.

**PROPAGATING BUXTOMES (J. Mason).**—If you select cuttings of short-jointed tolerably firm shoots, not sappy growths, about 5 inches in length, and insert them firmly 3 inches deep in sand under a handlight, or in pots to be kept close in a frame, the sand to be constantly moist, most of the cuttings will strike, and if they are potted in good but rather light soil will speedily form attractive little plants.

**AMPELOPSIS VEITCHII NOT COLOURING (Perplexed).**—The very means you have adopted to induce the foliage to assume the rich crimson glow that is so much admired have prevented the foliage colouring. "A rich, deep, and well-matured site with liquid manure occasionally" would promote the plant's growth and retard the colouring of the foliage. This plant never colours so well as when grown in very firm and not rich soil, and in a sunny situation. As your plant attains age, and has space to extend itself, it will no doubt assume its bright autumnal garb.

**CLUB ROOT IN CABBAGES (G. D. Walton-on-Thames).**—The specimens submitted are badly affected with this disease, but if our memory serves us these you sent before were as bad or worse. It is strange that the plants should be more generally attacked this season, as dry weather is usually favourable to the increase of the weevil, the larvae of which constitute the disease known as ambury by feeding on the soft portion of the root, thus inducing the warty and swollen appearances characteristic of its presence. Frequent transplanting is a remedy if attention be paid to removing the small warts from the roots, which can easily be done when they are in a young state. Good dressings of charcoal dust or soot pointed in with the

spade would be found very beneficial, and in some cases they have proved effectual remedies. The application of gas lime in small quantities has also been recommended for the destruction of the larvae. If applied in the spring from four to five bushels per acre should not be exceeded; but if employed in the autumn it may be spread on the ground at the rate of twenty bushels per acre, and be dug in and well incorporated with the soil in the spring. We have recently seen a garden from which chubbing has been in a great measure exterminated by the adoption of the practice last mentioned.

**BROOKS AND SILVER-LEAVED PELARGONIUMS FOR BEDDING** (*Agrieola*).—The following are varieties of proved worth:—*Silver-leaved*—Princess Alexandra, Miss Kingsbury, and as a dwarf grower Little Trot. Flower of Spring, with creamy variegation, is also an excellent bedder. *Bronze-leaved*—Marschal McMahon, Black Douglas, Rev. C. P. Peach, and as a dwarf for edgings Golden Harry Hieover. The manure you name and your proposed mode of applying it will be good for all the plants to which you refer.

**MURKAT GRAPES DROPPING** (*H. P. H.*).—Excessive moisture is the cause of the partial decay of the Grapes. The berries that are sound are unusually watery and deficient in flavor. The Vines appear to have been well managed so far as the low side of the border and an unusually wet season have allowed, for the bunches are full and the berries regular. There is no remedy but intercepting the water that drains from the higher part of the garden and preventing its reaching the Vine border. It will be well, however, to employ fire heat so as to maintain a warm and dry atmosphere in the house, with a free circulation of air. Although the water has always drained to the Vine border in past seasons it has probably never been in such quantities as during the present year.

**PROPAGATING LAURELS AND YEW** (*A Constant Reader*).—Laurel cuttings should be taken of the current year's growth with a joint or two of last year's, inserting them about two-thirds their length in a sheltered situation, making the soil very firm around them. They should be inserted at the close of September or early in October. Yew cuttings should be taken off with a heel of the previous year's growth, and be divested of the leaves half way up the cuttings, to which extent they should be inserted in sandy loam surfaced with sand, which may be done now, the wood being firm; or the ripened growth may be inserted in April, choosing a shady border. No artificial heat is necessary.

**GRAPES CRACKING** (*H. T. H.*).—The wet season has caused an excess of nutriment available for the production of foliage and the swelling of the berries, which now that the Grapes are ripening is more than can be assimilated, and this causes the skins to burst. This is one cause of the fruit cracking, and in this case the evil may be remedied by keeping the laterals closely stopped so as to check root-extension and admit of the foliage being more fully exposed to light and air, thereby increasing its evaporative power; also cut the shoots about half way through below the bunch, which will arrest the flow of the sap to the fruit. Cracking may also result from a too moist and confined atmosphere, which prevents evaporation and promotes rapid and continuous growth. The remedy is to admit air freely, a circulation of rather dry warm air being essential to the perfecting of most kinds of Grapes, and especially for those liable to this defect. Employ gentle fires to secure a dry atmosphere by liberal ventilation, employing any spare lights if possible to throw off heavy rains from the border, or falling those tarpanin or wood shutters would answer.

**FIG CULTURE** (*Ego*).—The growths should be sufficiently thin so that the sun and air can have free access to them to ripen the wood. If the trees grow luxuriantly dig them up in early October, and shorten the strong roots, replanting in rather poor soil, the site being well drained and the soil rammed very firmly about the roots. Unless you can secure short-jointed and well-thinned wood you will not succeed in growing the trees as standards. You can have the number to which you refer by sending 3d. in stamps to the publisher.

**TREES UNFRUITFUL** (*C. Y.*).—We suspect your Catalpa Pear tree is too much crowded with wood and foliage. Thin out a portion of the interior branches, but do not shorten the others materially. If the tree grows luxuriantly dig a trench half round it at about 4 feet from the stem, severing the roots, which, however, should not be left in a jagged state, but should be cut smoothly with a knife. Fill in the soil again, and if you can add some fresh loam all the better, pressing it very firmly. The tree should be well manured for the severance of any roots that are penetrating the subsoil; indeed, dig the tree half up in October. If this does not prove sufficient to check over-luxuriance and promote fruitfulness repeat the process on the other side of the tree next year. You will then obtain a multiplicity of feeding roots near the surface, which you can keep there by an annual top-dressing of manure. There are two causes of Pears cracking—one a wet unconsolidated subsoil; the other inclement weather in the spring, injuring the cuticle of the fruit when it is a tender state. The Warner's King Apple tree treat similarly—that is, root-prune and thin out the shoots, but do not shorten those that remain, or only shorten them slightly for the sake of symmetry. This variety generally grows rather strongly. The wall Plum tree that has grown wild requires bold treatment to bring it into a fruiting state. Cut off the growth above the wall, and also all the long spurs, leaving only bare main stems at regular intervals of about a foot apart. In the spring these will bristle with young shoots, the greater portion of which must be rubbed off when they are an inch long, eventually thinning out the remainder, only leaving those of medium strength and short-jointed at intervals of about 18 inches. These shoots, if secured to the main stems and not shortened at the winter pruning, will form natural spurs during their entire length, and eventually the tree will be rendered fruitful. The young shoots on the upper portion of the tree will possibly require pinching when they are a few inches in length, so that the growths at the base are encouraged. If the growths are very exuberant they may be turned back and trained downwards to the main stems instead of being secured in their natural upright position. By adopting the practice detailed we have succeeded in obtaining full crops of fruit from Plum trees that had been fruitless for twenty years.

**OLIVERWELL'S TELEGRAPH PEA** (*A. J. J. Mansfield*).—This very fine Pea usually produces well-filled pods, and its failure in this respect in your case we attribute to excessive wet in conjunction with very rich soil. We have pods both of this variety and Telephone before us now that are so full of large peas that it is no easy matter to shell them.

**STEPHANOTIS NOT FLOWERING** (*E. H. Downon*).—If you have the free-flowering variety your plant will flower whether it is grown in a pot or planted out, provided the growths are trained near the glass where they can

have plenty of light and become well matured, and not crowded round a trellis or grown in a shaded position. If you wish the plant to cover a considerable space plant it out, but if the space to be covered is limited it will be well to grow the plant in a pot. The shy-flowering variety has very large leaves and grows luxuriantly, the other has smaller foliage. If a plant is in a pot and the growths are trained near the glass they can be taken down when the flower buds are visible and trained round a trellis for forming a specimen plant.

**RENEWING VINE BORDERS** (*W. Field*).—Vine borders may be renewed at any time after the crops are cut, but if the weather is hot and the foliage still green great care is requisite in performing the work. A safe time for lifting Vines is as soon as the foliage changes in the autumn and before it falls from the Vines. The soil has not then parted with the heat absorbed in summer and fresh roots often form immediately, especially if the foliage is retained on the Vines. You may either lift the roots entirely or remove all the soil you can from amongst them and work in fresh compost. Your practice in this respect must depend on the state of the Vines and borders, and other circumstances. The narrow border to which you refer should be made twice the width at once, removing as much of the old border as you can without injuring the roots before you apply the fresh compost. Read the remarks on lifting Vines in our last week's number, they will probably afford you information that will be of use to you.

**SELECT HYACINTHS** (*W. E. Otter*).—*White*—La Grandesse, La Franchise, Mont Blanc, and L'Innocence. *Red*—Vuurbaak, Albert Victor, Von Schiller, and Garibaldi. *Blue*—Oscar Peter, Princess Mary of Cambridge, King of the Blues, Charles Dickens, and Masterpiece. *Yellow*—Oblique, and Bird of Paradise. The above varieties will succeed in either pots or glasses. The most expensive Hyacinths do not invariably produce the largest spikes, neither do those that produce the largest bulbs. Any of the cheaper varieties will do for beds or borders. Choose the colours you require.

**NAMES OF FRUITS** (*S. M. and A.*).—We do not know a Gooseberry named Langley Green. That of which you have sent a specimen is very much like Hebburn Frolid, a very excellent variety.

**NAMES OF PLANTS** (*S. C. O.*).—Plants Leriche, or one of its varieties. (*H. H. C.*).—The small green-foliated plant is *Saxifraga cernatophylla*, the other was too crushed for us to recognise it. (*F. E. H.*).—*Stapelia plectra*. (*G. O. S.*).—The plant is a *Sida*, but we do not know a species with which it exactly corresponds. It has some resemblance to *S. malviflora*, and perhaps it is a variety of that species. (*J. S. Bury*).—1, *Polystichum aculeatum*; 2, *Laetrea Filix-mas cristata*; 3, We think *L. Filix-foemina cristata*, but this and the others were too much crushed, the fronds being young, for identification. Older fronds should be sent with spores on them. (*J. Henckes*).—*Sedum Sieboldi variegatum*. (*B. B.*).—1, *Pilea muscosa*; 2, *Centradenia rosea*; 3, *Mussaenda frondosa*. (*M. B.*).—The plant resembles a *Spiraea*, but it was too withered to be satisfactorily identified. (*W. Field*).—The specimen with large leaves is *Jamunum latifolium*. The Fern is *Nephrolepis pectinata*. The Passion Flower we are unable to identify. The small white flower is *Eupatorium aromaticum*. (*E. W. Yeovil*).—*Asclepias angustifolia*. (*A. A.*).—1, *Pittonia* (*Gymnostachyum*) *Verschaffeltii*; 2, *F. argyreaurea*; 3, It is impossible to name such a specimen; 4, *Chrysanthemum coronarium* var.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### THE ADVANTAGES OF DEEP CULTIVATION.

THE history and traditions of agriculture from the earliest period have recognised the benefit to be derived from deep cultivation; it is still admitted to be a matter of the highest agricultural importance, except in a few isolated cases and under peculiar circumstances of soil and climate. We shall therefore allude to these exceptions whilst carrying out the task we have undertaken of setting forth the advantage to be derived from deep cultivation, and explaining the best and most economical manner of obtaining it.

If we go back to the early period of agriculture in England we shall find that the contest lay between the spade and the plough, and between the labour of man and the power of the animals used in agriculture. Our connection with practical agriculture commenced some years before the power of steam became available for the tillage of the land, and we recollect the proposals of certain advocates who placed the matter before the farmer as spade versus plough. The origin of the controversy upon the subject was the difference in the extent of the occupation, and it is at present a question for the home farmer to consider whether in the cultivation of good land and manual labour at command it may not be judicious to adopt spade culture. If, however, circumstances may be against it as a system for annual usage, there can be no question that land being deeply dug with the spade once every four years would be attended with great benefit to the crops, and also with economy, by facilitating and rendering the horse labour more easy. In cases where spade labour only is in use, such as market gardens, they are dug 12 inches in depth. The evidence derived from experiments where land has been dug with the spade, in some instances side by side with ploughed land, the

result in crops of all kinds, whether of grain, pulse, or vegetables, has been found largely in favour of the former. The next comparison we must make will apply to a home farm where the chief portion of the farm is in pasture with only a limited area of cultivated land; and, in case the labour can be obtained, spade culture, where deep cultivation is a necessity, will be found far more advantageous than the plough culture. Whether the cereal portion of the crops or roots are most required, it must be remembered that not only the greatest weight of roots per acre will be obtained, but in the cereals the amount of straw grown will be most abundant; and this last is an important point where only a few acres are grown, more especially in connection with an extensive area of grass land. This leads us to another point connected with the subject, for at present, although hand labour is more expensive than it used to be, yet the same argument applies to animal or horse power, for the animals themselves cost more than formerly, and so do harness, shoeing, &c. When it is considered that in spade culture the whole requirements relating to tillage are simply the spade or the steel fork, the rake, and a wheelbarrow, &c., this is a small matter when it is compared with the various implements required for tillage by horse labour, and also the feeding of the horse, its first cost, its annual decay, and the various accidents to which it is exposed. There are also other matters to be looked to, such as hindrance by bad weather, &c.; these, although only collateral, are nearly all in favour of the spade. We give, however, no money comparisons because the price of labour and other items vary in different districts.

We will now refer to deep culture as connected with farms of considerable size and large areas of arable land; in fact, this is a large subject, requiring great experience to decide the many and various points which will arise for consideration upon the practical carrying-out of deep tillage of the land. We have noticed many instances where ditches have been filled in that the corn or roots always grow with great luxuriance in such cases. The home farmer will have also frequently seen the same results, and this will always be the means of calling attention to the advantage of deep culture. The first kind of soil we will refer to is clay or strong loam, and if such land is too wet and requires draining—which is often the case, particularly where it lies flat and level—draining should always be effected before deepening the tillage, because if the land is stirred deeply before draining, it only deepens the basin and enables the land to hold more water without providing for its escape, which makes it more unfavourable for the growth of crops. In soils with a porous substratum it is, however, just the reverse, for it often happens, particularly where the subsoil is composed of gravel, that there is just beneath the level where the plough has been accustomed to work a hard iron-bound conglomerate of gravel quite impervious to water, rendering the land too wet in the winter and too dry in the summer. When this is broken through by subsoiling, the water can sink down freely, at the same time capillary attraction occurs, giving full assistance to plant life during the summer months. It is, perhaps, difficult to say how deep the land may be stirred with advantage; one thing, at any rate, is certain—that whenever the subsoil varies much it is desirable to render the land as much alike as possible in its productive capacity by deepening the soil throughout, in order that the patches of shallow land with impervious substrata may be made as pervious to the roots of plants as the best land so formed by Nature. An erroneous idea sometimes prevails that it is not necessary to deepen the tillage for the ordinary crops of the farm; but why not? It cannot be said that the roots of the cereals will not go down as deep as the market gardeners' crops, and strictly speaking the farm crops of mangold, Swedes, and carrots dive down equally deep into the soils as the crops grown by the market gardener. To illustrate this matter we have taken up the roots of wheat and oats which have penetrated the soil to the depth of 5 or 6 feet, the roots of red clover to 8½ feet, white Belgian carrots and Swedish turnips to 5 and 6 feet, and in all probability the small fibrous roots which would break off in lifting the bulbs, &c., go much deeper when the subsoil is naturally loose or made so by mechanical means. In ploughing land in the usual manner the soil is not moved more than about 4 or 5 inches in depth, except in winter fallowing it may sometimes be ploughed 6 inches deep.

There is one thing we have often noticed. When we have been looking over land in various districts, and when we desired to see what the land was capable of, we have invariably examined the cottagers' gardens, and we hold that whenever cottage gardens are productive the adjoining lands may be made so likewise. Nor is this a question of manure, for the farmer often has an almost inexhaustible supply, whereas the labourer depends chiefly upon the depth of tillage; in many cases moving the land two spits deep, still keeping the best soil on the top. In fact, taking the mode of cultivation generally, the home farmer should remember that the utmost limit of production is not to be obtained by manure alone, but by a well-regulated system of liberal manuring accompanied by deep and effective tillage of the land. Again, whenever it is proposed to cultivate deeper than usual the work should be commenced by deep ploughing or digging during the early winter

months when fallowing for root crops, &c. The newly-broken soil then becomes mellowed by the winter frost and alternations of the weather, and is then in a fit state to become mixed with the other portions of the furrow slice in the after-ploughings during the spring and summer months. We know that it is frequently said when land is more deeply cultivated that more manure is required; but that is not the usual effect, because it is well known that a given quantity of manure will produce far better results combined with deep cultivation. On soils which may have been chalked formerly, and the chalk having, as a considerable portion usually does, sunk into the subsoil, this by deep cultivation is exposed to the action of the atmosphere and brought into use, instead of lying inert in the unmoved substratum. Again, it is often supposed that manure should not be buried too deeply in the soil, as the roots of corn cannot have the full benefit of it; but this is a great fallacy, as the depths which we have stated that the roots both of corn and vegetables descend into the subsoil will prove. With regard to the means of effecting deep cultivation to be obtained by the home farmer, it will depend much upon the extent of the arable land. Upon small occupations it is open only to the use of such implements as were formerly used—namely, the subsoil plough, intended to stir the subsoil alone. This implement usually follows the ordinary plough, and breaks up the pan or hard subsoil without bringing it to the surface, but it is laborious work for three horses, the top furrow having been turned with two horses. This work is, however, expensive, and upon occupations of considerable extent steam power should always be used in a way to be explained in our next article.

(To be continued.)

#### WORK ON THE HOME FARM.

*Horse Labour.*—The horses have lately, since the improvement in the weather, been employed in drilling turnips, and this work will no doubt be continued while only a short root lain has been provided for. Late as it is turnips may yet be drilled after rye, winter oats, or the early white oats with a fair prospect of obtaining a useful crop, particularly if the Grey Stone or Early Six Weeks are drilled with a liberal application of superphosphate and ashes. Although the roots would most likely be rather small, yet, if the seed is drilled at 14 inches between the rows and the plants left thick in the rows, a fair crop may be obtained, more especially if the autumn and early winter months should prove open and mild. When the turnip seed is drilled after a cereal crop as fast as the corn is cut, by ploughing, &c., between the rows of shocks or pooks the land is always moist, soft, and kind, and in much better condition than it often is after a fallow in a summer like the past, and also much freer from the insect enemies to the young plants. In the early districts the harvest will commence by reaping wheat in a few days—in fact, it may be said to have already commenced in a few cases of Talavera, Australian, and the early varieties of wheat sown early. It will this year be extremely important to sow trifolium as early as possible after the corn is cleared, in consequence of slugs being so numerous, for we have never seen them more abundant than they have been during the past summer, and quantities of young mangold plants as well as other roots have been entirely destroyed. A friend asked our opinion upon the policy of sowing trifolium upon a clean fallow instead of after a corn crop, where so many slugs were sure to prevail after harvest; and further asked the best method of sowing, &c., upon fallow land. In reply we stated that there would certainly be a better chance of avoiding the slugs, the only enemy of any consequence, by sowing upon a fallow preparation, provided that at least 25 lbs. of seed per acre be sown, the land being rolled with the ring roller, and after sowing harrow once or twice with the chain harrow; this will not only insure a firm bed for the seed, but the seed will not be buried too deeply but with regularity.

*Hand Labour.*—Hand-hoeing and horse-hoeing must be continued every fine day, as the weeds have not died after the hoeing as they do in ordinary seasons. We will suppose that by this time all the work of the farm has been forwarded in anticipation of the harvest, so that there may be no delay when it has been commenced. This is more especially necessary in this the latest harvest we have ever known, and anyhow it must prove an expensive one, because the length of the day is fast diminishing and the hours for work decreasing. It often happens when the harvest is unusually late that the corn is not ready for stacking so early in the morning, nor can the work be continued so late in the evening as when the harvest happens a month earlier. September and October are difficult months in which to provide a sufficiency of green fodder for dairy cows and cattle fattening under cover in the boxes; clover, however, may still be available for cutting and soiling cattle and working horses, and where trifolium, or vetches with rape, had been sown in May and June these crops will now prove extremely valuable. One of our tenants showed us the other day a capital piece of white Canadian oats nearly fit to cut with a fine plant of broad clover at the bottom, and we advised him to cut the oats above the clover, in order that the latter may spring up and furnish a crop fit for soiling cattle soon after harvest, it being good food until the first

frosts commence. In this way for a long series of years we have provided for cattle and horses in the autumn whenever the season has been favourable. The mangold of the previous year's growth will in most cases have been used up by the first week in November; the new crop will then be fit for feeding, for we never hesitate to use mangold at any period of the year, but we always feed with moderate quantities. We have found in our own practice ever since this root first came into use that they are as safe as any other root food for both cattle and sheep at any period with proper quantities of hay or corn, and if used with judgment and discretion.

### JUDGING AT POULTRY SHOWS.

It is not long since there was a general outcry among fanciers about the paucity of poultry judges. It was supposed that there were few if any fanciers, besides the very few who then officiated at the great shows, who were competent to judge anything like a fair exhibition. Some half dozen judges, several of whom had had constant practice in their duties for over twenty years, had justly acquired great celebrity. The committee of one show followed the lead of another, and thought it absolutely necessary to secure the services of one of these gentlemen. Committees, too, were very exigent, and having got hold of them thought that no amount of work could be too great for them, so quick were their eyes and rapid their decisions. This was extremely unfair upon them. We have seen judges at the end of a long and laborious day poring anxiously into dark pens while assistants held flaring tallow candles, or allotting prizes to birds of delicate colours by the dim gaslight of Bingley Hall. The natural result was that they were terribly overdone, and that very frequently their awards by no means gave the general satisfaction that they formerly had given. A thoroughly tired brain cannot possibly make the fine discrimination that one fresh to the work can, neither is the human mind able to be as calm and collected in the bustle of an open or partially open exhibition as in the earlier hours when all is quiet.

What was to be done to remedy this difficulty? The poultry fancy had outgrown its original dimensions tenfold, and yet all the great shows in the kingdom were being judged by about the same number of men. Many people advocated trying "amateur" judges. The term is a little vague, for all the famous judges were amateurs of poultry. Most of them had formerly been successful both as breeders and exhibitors, and had retired from the pursuit content with their laurels of old and their experience.

What, then, was meant by amateur judges was judges who still amused themselves with breeding and exhibiting. In another point, too, there would be some difference between the two classes of judges. Those who gave the amount of time and trouble to the duty that many of the celebrated judges to whom we have alluded gave, and in some cases still give, very naturally and properly received some honorarium for their services; while judges who are still breeders and exhibitors, and only now and then forego showing to judge, can afford to give their aid gratuitously. To this suggestion there was great opposition from people, who without much practical experience in poultry breeding, had from diligent attendance at shows gained some superficial knowledge, and thought that they might step into the shoes of the great judges and make judging a profitable employment. They were even warning committees of shows that amateurs would inevitably make a mess of judging, lose their heads, and give all the prizes to the worst birds. Managers of shows, in the apprehension of losing entries, were naturally timid about making innovations. At last one or two tried the experiment. If our memory does not deceive us the Committee of the Cirencester Show were about the first to do so. It was soon found that exhibitors to whom it certainly signified most showed their approval by making large entries at shows so judged, and expressed themselves generally pleased with the result. Of course here and there amateurs made mistakes, like other people; but all reasonable exhibitors make allowance for these, and that the fancying public are content with the innovation is clearly proved by the fact that at an ever-increasing number of shows amateurs officiate, and that some fanciers who strenuously opposed the system have come round to it. The first, and obviously one of the best, results is that a really adequate staff of judges are appointed for most shows of importance. Fortunately there has been no kind of rivalry between the old and new judges, but we find their names together in many a schedule; the former must find their labours much lightened by this subdivision of the work, and the latter may learn many a hint from the experience of their seniors.

We have before us the schedule of the Hemel Hempstead Show, at which we see that not less than six judges will adjudicate in the poultry classes alone; two of these gentlemen have long been on the list of judges, three others have only of late officiated, while one well-known and successful breeder will make his *début*, taking some of the local Hertfordshire classes. We also understand that at the shows to be held at the Agricultural Hall in connection with the dairy shows many of the classes will be taken by amateurs specially conversant with them. We always advocated judging by amateurs, and so are extremely glad to see

this result. Of course it entails some practical difficulties which must be looked in the face. The chief of these arises from the fact that almost all breeders sell their superfluous stock, the breeding of birds of high pedigree would otherwise be too expensive a hobby for any but millionaires, consequently when making their awards they may come upon birds which they have bred and sold; this is certainly a difficulty, but one, we think, which sounds more formidable than it really is. Of course an honourable person (and from such alone are judges likely to be selected) will take care, when engaged to officiate as judge, to part with no birds without a stipulation that they shall not be brought before him. Again, if birds really come into close competition for prizes which he recognises as having ever been in his possession he will at once call in the aid of a brother judge.

The task is a hard one, far harder to delicate constitutions than the inexperienced would believe. Constant and strained attention is necessary in class after class for perhaps many hours, while the judge passes backwards and forwards, to the best of his power carrying in his eye the respective forms and merits of close competitors, and all the while tramping many a mile up and down the show hall. We can testify that one amateur, who probably has during the last two years officiated oftener than any others, is almost always thoroughly knocked up by judging, save only when the public are *bonâ fide* excluded till all awards are made. We say *bonâ fide*, for somehow or other the clauses in schedules about the exclusion of the public are seldom rigorously carried out. Some committeeman has a friend who must leave the town by an early train, or the reporter of an influential newspaper must be propitiated, or some distant exhibitor has come from far to see the show, has made many entries, and promises more next year if admitted early. For these and divers other reasons a certain number of people generally get in, and of this judges most justly complain. An admirable plan was honestly carried out at the Jersey Show last winter; at a certain hour the show room was locked up with only the Judge in it, and one person to carry his slippers ready to the office; not even the Secretary or Committee entered the room, and we know that the Judge found his labours through some large and super-excellent classes greatly lightened by this easy expedient.

Few things are done to perfection at once. The amateurs who are public spirited enough to officiate as judges may not always in their earlier attempts manage their time well; perhaps at first they find it hard to please themselves, and then horrified at their delay have to hurry on against the grain, but practice overcomes this difficulty. It is best to attempt judging first where competition is not likely to be very severe, and in classes with which the judge is specially conversant. As a rule no man is a really good critic of any breed which he has not kept himself, but when any one with what we have before called a fancier's instinct has once thoroughly mastered the points of several varieties, he will not find it difficult to become a judge of kinds which he has not himself cultivated. A number of amateurs have been found who are willing to take their turn in foregoing the amusement of showing to judge. We rejoice at this change in the poultry fancy, and augur from it more comfort and self-satisfaction to judges in general, and fewer disappointments to reasonable exhibitors.—C.

### VARIETIES.

THE Shropshire Bee-keepers' Association held its Show at Shrewsbury in connection with the Floral and Horticultural Society, on the 20th and 21st inst., but the same cause that has damped so many enterprises this summer told there with terrible effect, the rain descending most pitilessly during almost the whole time of the Exhibition. The Hon. and Rev. C. Feilding, the Hon. Sec., spared no pains in securing entries and obtaining bees for manipulation in the tent borrowed of the parent association, but the weather prevented an admirable programme from being carried out; Mr. Cheshire as lecturer, and Mr. Abbott as manipulator, scarcely getting one hour each day for operations. While cottagers with skeps in the district find their bees in most cases starving, and often also queenless, it is worthy of remark that Mr. Harding, a local bee-keeper with frame hives, brought some splendid extracted honey, several pounds' worth of which were sold. Mr. Abbott obtained first prize for hive, while a cottager entered the prize list with a good bar-framer of his own making, the basis of which was a lobster box, and the total cost to himself less than 2s.

THE fourth Exhibition of the Devon and Exeter Bee-keepers' Association was held in connection with the Flower Show. The exhibition of bees and bee appliances was, considering this exceptionally poor season, of a satisfactory character. Numerous exhibitors sent hives and other bee appliances from long distances, some coming from Scotland. During the afternoon short addresses on bees and their mode of living were delivered by Mr. S. Baldwin. Mr. S. Griffin officiated as Secretary of the Show, and Messrs. P. Williams, G. Fox, and S. B. Fox as Judges. Mr. Griffin was awarded the chief prizes for the best harvests of honey in the comb, for the best sample of beeswax, for the best supers of honey, for the best observatory hive, and for

the best straw hive. Mr. Steel secured the chief prizes for the best bar-frame hive and the best wood or straw hive. Mr. Corvar and Messrs. Neighbour were granted the prizes for honey extractors, Mr. Baldwin for the best single super and apianian appliances, and Miss Symons for the best display of bee flora.

### DO BEES HEAR?

SIR JOHN LUBBOCK, whom we all honour much, tells us that he was utterly unable to gain any evidence of bees hearing. All varieties of sound at his command were alike disregarded. Tuning forks, whistles, violins, and even the voice of the distinguished investigator, which has so often caused the faces of his fellows to beam with delight, produced no response in Master or rather Miss Apis, and hence many have boldly asserted that the bee cannot hear. Let me give some observations which, I think, prove conclusively the opposite. In the first place, that the bee does not respond to the sounds enumerated, proves nothing; for could some alien being watch humanity as found in our streets during a thunder storm, would he not conclude that the thunder was by us inaudible? Clap might follow clap, and yet each would go on his way simply because the thunder called for no responsive movement; but let a little child with thin and tiny voice but shriek for help, and all would at once be awakened to sympathy. So with the bee; sounds appealing to its instincts meet with immediate response, while others with which it has nothing to do evoke no wasted emotion.

The practical bee-keeper if observant must again and again in the ordinary management of the apiary meet phenomena which he can in no way so fully account for as upon the supposition that bees hear, and these in their accumulation present a sum of evidence which to my mind is perfectly irrefragable.

The adherents of the frame hive are in the habit of taking their swarms in skeps, from which the bees are thrown in front of the domiciles they are permanently to occupy. If the bees are all or nearly all dislodged all goes on well, but if many remain the buzz they set up in the skep distracts and much hinders the in-march of those ejected. I have many times made the experiment of removing the remaining bees to a distance, and of again bringing them near, when the behaviour of the swarm proper has been such as to force to the conviction that either hearing or smell is acting powerfully in guiding the movements of the little throng. In like manner in the making-up of nuclei by dividing a lot of bees having several newly hatched queens amongst them so that a queen is given to each—if the nuclei are placed around the mass lying on a sheet for instance, the buzzing set up in several points at once will so confuse the general body that its bees will remain most vexatiously inert, and will suffer themselves to be shovelled in any direction and placed close to a nucleus door without caring apparently to enter. If, however, the nuclei are placed close together a direction will be at once taken by the bees generally, and that will be towards their fellows. This fact comes under the observation of those only who raise queens in nuclei, but more would have observed that artificial swarms cannot well be made simultaneously in spots very near to each other, the bees being confused from the same cause as before; and further, if, while an artificial swarm or a natural swarm thrown down, is in full march into a hive another swarm or a stock set buzzing by smoke be brought near, the confusion is at once marked, the march is interrupted, the bees hesitate, and many turn at once towards the alien but buzzing bees. The removal of the bewildering sound restores all to order. But here, as before hinted, it may be objected, it is soent and not sound that causes the difficulty; but this can be easily disproved—thus, if the bees intended to cause the distraction be placed quietly near no effect is produced, but so soon as they are shaken or smoked what has been described is observed at once.

In the bee tent at Birmingham a beautiful and accidental confirmation of this occurred. The operator had driven and transferred five or six stocks, and a collection of lost bees, nearly a pint in quantity, had clustered on the canvas lying against the central pole. The dusk of evening was coming on, and they had evidently huddled together for mutual warmth during approaching night. The operator for the last manipulation brought in a stock in straw, inverted as usual, placed his cloth over it, and waited for my direction to begin drumming. I watched the bees as I spoke; all continued perfectly quiet. The receiving skep was put in position and leant against the upright pole about 2 feet 6 inches above the aforesaid cluster. The drumming commenced. The swarm rose well in from one to two minutes, commencing the well known rush with a strong rustling roar, the bees on the canvas so still hitherto faced upwards immediately, and trooped up at once regularly and unhesitatingly, and settled upon the outside of the roof of the receiving skep which the driven swarm was now occupying. I pointed this out to the spectators as an undoubted case of bees directed by the sense of hearing.

Do not these observations explain the often noticed fact that the swarming of one hive is likely to produce swarming in others? The bees, I take it, hear the sound to which they are responsive and obey it. It also explains to me that from which I have

often suffered, that nuclei, notwithstanding their few bees, are much more likely than strong stocks to swarm out when other hives near swarm. In strong stocks the hum of the busy throng drowns somewhat the sound of the issuing swarm, but in nuclei so little is going on within that it enters with undivided distinctness, and produces its result in giving the swarming impulse. So great is this tendency in nuclei that I have abandoned keeping them amongst other colonies. The pan and key has called forth some good-humoured but possibly not always philosophical banter, for I confess I think it likely that it has its value. Piping, whatever be its cause, seems to point to a sense of hearing, for it appears to be a sound made for its own value and not the result of some necessary movement; but leaving this question of piping for the present out of view, has not a case of much strength been made out in favour of bees hearing?—F. OSMESHIRE, *Acacia House, Acton.*

### OUR LETTER BOX.

**CHICKENS UNABLE TO WALK (J. Sharrow).**—They are paralyzed. They have been probably forced into growth by being fed too stimulatingly. Give only soft food.

**GRUBS IN HIVE (C. E. T.).**—The white grubs you see indicate starvation. Great mischief has been done already, and feeding is the only way of averting total ruin to the stock. The bees, finding food failing, are, to reduce their present expenditure and prevent the raising of young which they could not sustain, sucking the juices of the leaves and throwing their bodies out of the hive.

**FOUL BROOD IN SUPER (Gardner).**—The super comb in which your queen had bred, and which you feared was tainted with foul brood, arrived so soaked in bleeding honey that little could be determined by appearance. The odour, however, awakened our suspicions, which the microscope unfortunately confirmed, for the brownish matter is full of micrococci. (See the article, "Foul Brood," June 24th.) Since the super is thus tainted the hive will probably be in bad condition. If you will let us know at once whether it has movable combs, giving us information as to the amount of brood, number of bees, &c., stating also whether you have other hives, we will advise you as to your best course; but begin now to feed with salicylated syrup as recommended in the article before mentioned.

**CANARIES WITH CLOGGED FEET (Amateur, Gainsborough).**—Canaries fed upon the cayenne pepper food are more likely to become clogged in their claws than when the birds are fed upon seed. Want of cleanliness, even upon any diet, will cause Canaries' claws to become clogged. Cages should be cleaned out at least once a week, the cage bottom freely furnished with clean grit sand, and the birds occasionally supplied with a bath into which they can enter apart from their usual drinking fountain. If you accustom your birds to a bath they will use it if for a time you keep away the drinking vessel. Clogged feet prevent the proper circulation of the blood, bring on a cancerous state of the claws, and eventually cripple the birds by portions of the feet wasting away. Upon freezing the feet from the filth use tenderness and great care. Take each bird in your hand, and with the aid of some water in a basin soften the dirt with your thumb and finger. In cold weather use tepid water, or you will perchance give the birds cold. The tails of the birds may be cleansed in the like manner, but be careful over operating, or you may draw out the tail feathers.

**BARBERRY JAM (A. M. B.).**—The following is a good recipe for making the jam:—Pick the barberries clean, bake them in an earthen pan, and when done pass them through a sieve with a wooden spoon; add to them their equal weight of pounded sugar. Mix the whole and put it into pots covered with sifted sugar, the papers dipped in brandy. It is very wholesome, and so also is jam made from the fruit of Mahonia (Berberis) aquifolia, the jam of this species being considered good for sore throats.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 23' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain.
1879.	Baromet. at Sea and Level	Hygromet- er.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
August		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
We. 20	Inches.	deg.	deg.	S.S.W.	deg.	deg.	deg.	deg.	deg.	In.	
Th. 21	29.677	63.8	63.0	S.	59.0	64.9	54.5	76.1	54.3	0.000	
Fri. 22	29.718	68.0	68.4	S.	56.8	69.6	58.0	91.0	58.5	0.185	
Sat. 23	29.690	68.8	58.9	S.	59.5	70.8	54.9	123.6	59.4	0.316	
Sun 24	29.835	57.5	57.0	S.E.	59.4	65.3	55.0	80.4	51.6	0.000	
Mo. 25	29.989	61.8	56.5	W.	59.3	72.5	51.2	128.6	44.9	—	
Tu. 26	29.787	62.2	57.5	S.W.	59.0	69.0	57.2	119.8	54.5	0.015	
Th. 26	29.653	60.7	54.1	N.W.	59.5	63.5	63.1	101.3	47.7	0.795	
Means	29.761	62.9	58.6		59.4	66.5	55.3	108.1	51.4	0.093	

### REMARKS.

20th.—Warm and very close with slight rain all day; rather finer in evening.  
21st.—Close damp morning, rain commenced 10.30 A.M., thander from noon. Lightning 1.25 P.M., with sharp shower at 1.30 P.M., sunshine and showers afterwards.

22nd.—Very bright and fine in early morning, overcast and showery from 8 A.M. till 10 A.M., then very fine and windy; calm starlight evening.  
23rd.—Heavy rain until 1 P.M.; close and damp afternoon; rain in evening.  
24th.—Very fine pleasant day; cloudy night.

25th.—Fine in early morning, heavy showers between 10.30 A.M. and noon, afterwards fine and bright with strong breeze.

26th.—Very heavy showers during the morning, fine with sunshine between 1 P.M. and 3 P.M., heavy showers between 3.30 and 4.30; finer in evening.

Almost identical with last week, both as regards temperature and excessive rainfall. We have had nearly 4 inches in the last fortnight.—G. J. SIMONS.



## WEEKLY CALENDAR.

Day of Month.	Day of Week.	SEPTEMBER 4—10, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.			
4	TH	Dundee Horticultural Exhibition.	71.0	46.7	58.9	5 18	6 40	7 23	9 33	18	1 0	247				
5	F	Paisley Horticultural Exhibition.	70.4	47.1	58.8	5 20	6 37	7 43	10 43	19	1 20	248				
6	S		70.2	46.8	58.5	5 22	6 35	8 8	11 52	20	1 40	249				
7	SUN	13 SUNDAY AFTER TRINITY.	70.3	47.5	58.9	5 23	6 33	8 41	0 a 58	21	2 0	250				
8	M		69.4	48.0	58.7	5 25	6 30	9 23	1 59	22	2 20	251				
9	TU		69.1	48.1	58.6	5 26	6 28	10 17	2 52	23	2 41	252				
10	W		69.7	45.5	57.6	5 28	6 26	11 20	3 34	24	3 1	253				

From observations taken near London during forty-three years, the average day temperature of the week is 70.0 ; and its night temperature 47.1°.

## GLOBE ARTICHOKE FROM SEED.

My remarks on this subject are suggested by the requirements of Mr. J. Cuthbert (p. 158), and they may possibly be useful to other readers of the *Journal of Horticulture* who may be similarly placed as regards the total destruction by frost of their stock of Globe Artichokes.

Artichokes are undoubtedly very easily raised from seed, and, what is more, the plants if raised early will produce their heads the same season. The question is whether they will be good for anything after they are grown. My experience with seedlings (the season of 1877 excepted) has been very unfortunate, as out of a great number presumably of either purple or green Globe 90 per cent. have been worthless, the heads partaking more of the Cardoon than the Artichoke. Scarcely two plants were alike either in growth or the heads, and in all probability were the result of a cross between the Cardoon and Artichoke, as both are species of the genus *Cynara*. The seed I believe of both is imported, and must be grown in a very careless manner, which is much to be regretted; as when Artichoke seed is good, which was the case in 1877, the produce is decidedly better than that of plants grown from suckers in the ordinary way; at least such is my experience.

My advice to cultivators is not to rely exclusively on seedlings, but rather to obtain a few suckers from either a neighbouring gardener or a nurseryman. Our plants were nearly all cut down by the frost during the late winter, but many of them pushed up a number of suckers in the spring, which were either thinned out to two or three or were taken up, divided, and planted thinly in lines or dotted singly in various out-of-the-way spots, among fruit trees, &c. Those left on the old stools are now bearing freely, and a succession will be kept up by many of the planted suckers. Any of the latter that do not throw up this autumn will be replanted with a few strong suckers, choosing a warm spot, and from these we expect to obtain our earliest supply of heads next year. We sometimes cut heads at the end of May or early in June; this season the first were cut July 7th. Artichokes are greatly appreciated here (not classed with Cabbages and other second-rate vegetables, as some judges are disposed to rate them), and as we find young plants produce the best heads we are constantly replanting. The present moist season has been very favourable to the production of good heads, and the scales have been more fleshy or thicker than usual.

To return to the seedlings. Where the stock is completely lost by all means sow seed this autumn. The advice on page 158 about retaining some of the plants in pots is very good, as there is every prospect of the coming winter being a trying one. This advice is equally applicable in the case of suckers, but I should prefer planting and wintering them in a cold frame, protecting them only during severe weather. Potted plants, I know from experience, become very "spindly" and the reverse of what is required for the early production of fine heads. Strong autumn-sown plants

in all probability would produce heads early the following summer, and if more seed is sown again in heat in spring, and again in the open ground later on, the supply will be kept up till late in the season. I have never sown any seeds in autumn, but intend trying the experiment this season. My practice has been to sow early in March thinly in pans, using light soil and placing on a moderate hotbed. The seeds vegetate quickly, and the seedlings are soon large enough to prick out in large boxes. I have used pots, but give the preference to boxes similar to those used for growing-on bedding plants. The Artichokes are kept in heat as near the glass as possible till well established, then gradually hardened off, and finally planted out about the first week in May. If I wanted them early I should commence operations in January and plant out early in April. They will do well in almost any position the cultivator may select; all that is necessary is to bear in mind when the produce is wanted, and to sow and plant accordingly. To be more explicit, I should, if I had no other plants to rely on, put some of the strongest on a south border and others to follow these in a somewhat cooler spot; the soil in each instance to be heavily manured and deeply dug, as they are gross feeders and cannot well be treated too liberally. To keep up a further succession I should sow seed early in April in well-manured trenches, the soil of which after the preparation would be slightly below the level, covering the seed lightly, and watering with a rosed pot during dry weather. The seedlings eventually thinned to about 2 feet apart should be kept watered and well mulched before there is danger of breaking the leaves, which are somewhat brittle; an occasional dose of liquid manure is very beneficial. If the seed is true the produce of this sowing will be the best, and will keep up a supply till late in the season. I find the heads of the best seedlings are more conical than are those from suckers; but none of the varieties, however good the first season, prove superior to the old green Globe, and are certainly less hardy, all the best we had succumbed last winter. Suckers planted in a similar manner as advised for the seedlings well repay the extra trouble taken, and, as before stated, are more certain to give satisfaction, in consequence of the many worthless varieties obtained from one packet of seed. The purple Globe proved much the hardier here, but the green variety is preferred at the table.—W. IGGULDEN.

## BULBS FOR FORCING.

THE season has arrived when the potting of the bulbs required for early flowering must have attention. Roman Hyacinths if not already in a position to fill their pots with roots should be potted without a moment's unnecessary delay. Smaller than 6-inch pots should not be employed for producing a great amount of bloom and vigorous spikes, planting six bulbs in each pot. The stock of Paper White Narcissus should have been in pots before this time. They do well in from 4-inch pots upwards. The pots require to be placed in saucers kept full of water when the plants are in full growth. Tulips, of which only the red and yellow Duc Van Thol are forced early in our case, do well in 5-inch

pots, provided attention is paid to keeping the plants covered until just before the flowers reach the opening stage of development, and not employing overmuch heat to hurry them on. These, as well as other early-forced bulbs, come on very quickly when covered with dry straw, the foliage and flowers being well developed under this treatment. To follow those the crimson Duc Van Thol, Cottage Maid, Keyzers Kroon, and Canary Bird are easily forced, and provided they are grown in a rich compost and well fed when growing, five bulbs may be grown in pots the same number of inches in diameter.

A few of the best and most easily forced Hyacinths are Homerus, Norma, Charles Dickens, and Crown Princess; they are in colour red, blush-blue, and white. Those varieties are quite sufficient to grow for producing the earliest flowers. We pot them one or two in a 5-inch pot, according to strength of bulbs. These are also brought on under straw until near the opening of the flowers. To follow these the number of varieties may be extended; in fact Charles Dickens is the only one of the above-named worth growing later than January. A cheap selection of good Hyacinths for ordinary decorative purposes may be composed of the following:—Charles Dickens, Grand Lilas, Marie, Mimosa, King of the Blues, Haydn, Grandeur à Merveille, Grand Vainqueur, Mont Blanc, Gigantes, Von Schiller, Macaulay, Fabiola, Koh-i-noor, Lord Wellington (double), and Ida. For decorative purposes many of these do well grown from three to six in a pot: Charles Dickens, Lord Wellington, Grandeur à Merveille, and Von Schiller are particularly well adapted for growing thus. A 6-inch pot for the triples, and one of 7 or 8 inches for half dozens, are suitable sizes.

Good decorative Tulips, in addition to those already named, are Chrysolora, Proserpine, Superintendent, Van der Neer, White Pottebakker, and Rex Rubrorum. These are grown three bulbs in a 5-inch and four to six bulbs in a 6-inch pot. Of Polyanthus Narcissus we only grow four varieties—Paper White and Gloriosa for early in the season, Soleil d'Or and Grand Monarque for the later batches. These do better with larger pots than are used for either Tulips or Hyacinths. Two large bulbs of Grand Monarque require a 7-inch pot to do them justice.

Of what may be called miscellaneous bulbs *Scilla siberica* should be extensively grown. A line of this behind *Isolepis gracilis* as a front row produces a pretty effect. The *Scilla* should be grown in 6-inch pots, eight bulbs in a pot. It does not succeed with rapid forcing. *Triteleia uniflora* grown thickly in 6-inch pots is remarkably effective for decorative purposes. It has a serious drawback in the oniony fragrance it emits when too fondly handled. *Narcissus Bulbocodium* is an exquisite pot plant, and stands remarkably well in rooms. Of the *Iris*es there is perhaps none prettier nor earlier than *I. stylosa*, followed by *I. reticulata*.

Although all this class of plants will succeed in almost any kind of soil fitted to sustain plant life, one of the best suited to their requirements may be composed of loam with a very liberal admixture of dry cow or horse manure and sand; and sifted coal ashes form the best drainage for the pots. The soil should be rendered moderately firm with the hand, filling the pot only sufficiently to allow the Hyacinths and Tulips to be just peeping out of the soil. Polyanthus Narcissus may be very much higher, and the other bulbs mentioned should be quite covered. A little silver sand placed under and round the bulbs is of advantage. The middle of October is a good time to pot the later batches, allowing them to remain under cover of ashes or cocoa-nut fibre refuse until the middle of January at the latest. When the pots are well filled with roots liquid manure applied in a weak state is very beneficial.—R. P. B.

**FORCING STRAWBERRIES IN POTS.**—Although at present I am not growing Strawberries in pots, and though knowing well the danger of intermeddling with those who differ on a given point, I may yet venture to point out a mistake or two in Mr. Bardney's note on the above subject on page 143. When rooting runners in 3-inch pots there is no necessity to take them off the plants and place them in frames; that is a practice I have never yet seen. Neither is there any necessity for the rooted runners receiving a check when shifted into their fruiting pots, nor that the small pots should be washed, nor that the plants should in any case be weak and puny. I offer no opinion as to which of the two modes of growing Strawberries for forcing is best. I do not imagine with equally good treatment there would be any difference in the results, though

doubtless that advocated by Mr. Bardney has the merit of entailing the lesser amount of labour.—R. P. BROTHERTON.

### GLOXINIA CULTURE.

THE ordinary mode of raising Gloxinias from seed is to sow early in spring, and no plan can answer better if the object is to have the plants in flower in late summer and early autumn; but plants raised from autumn-sown seed may be had in flower in May, and are fine during June and July. These plants are valuable for the decoration of the stove, and equally so for the adornment of a warm conservatory. They are also extremely useful for affording cut flowers totally dissimilar from any other flowers of the same period, and are always acceptable.

If Gloxinia seed is sown now and the plants are grown thinly in seed pans they will form corms about the size of small peas before Christmas; and if these plants are gradually dried off the corms will become firm, and will keep sound in the soil if the pots are placed in a stove and the soil is not permitted to get dust-dry. On being introduced to more heat and moisture in the spring these pea-like corms will start into growth freely, and in due time will produce attractive flowering plants. That is the system that nine out of ten gardeners would adopt, on the assumption that the plants being of a bulbous nature need a period of rest, and that their natural resting time is during the winter. Granting that to be true, it may yet be stated with a considerable amount of confidence that the system referred to is not the best to be followed where fine plants and early flowers are wanted as soon as they can be obtained. The plants need rest, it is true, but surely not before they have done anything—not before they have flowered. Onions are bulbous plants, but if they are sown in the autumn they will grow as fast as the temperature will permit throughout the winter, and will flower early in the following season and then rest. It is precisely the same with Gloxinias.

Let seed be sown at once and the seedlings be pricked off as soon as they can be handled. If grown quite close to the glass in a well-heated stove they will soon be large enough for potting in thumb pots. By about Christmas they will have formed corms, and towards the end of January or early in February the plants will be ready for transferring to 4-inch pots. Growth being encouraged the pots will soon be filled with roots, and 5-inch pots will be needed in early April. In these pots the plants may bloom if desired, or they may be grown to a larger size by a further shift. When grown in either 5 or 6-inch pots Gloxinias are extremely useful for various decorative purposes. A shelf in a house in which Cucumbers are being grown is suitable for the plants, and equally suitable is a Pine stove; indeed any light structure having a minimum temperature of 65°–60° will afford them the requisite accommodation.

It is not, perhaps, necessary to enter into lengthened details as to soil and seed-sowing. Briefly it may be said the soil cannot be too light and fine for the seed pans. Sifted leaf soil and peat in equal parts and a liberal admixture of silver sand form an excellent compost. The soil should be thoroughly watered before sowing, and should be kept moist by shading rather than watering until the seedlings appear. The seed need not be covered at all if it is kept quite dark for a time, when it will germinate with certainty, but the moment that occurs light must be, gradually at first and eventually fully, admitted. Soil of the nature indicated will suffice until the plants are ready for 4-inch pots, when the compost may consist of a third of turfy loam, and for a later shift the loam may be increased and a little dried cow dung or much-decayed horse dung may be added with advantage. Free drainage and copious supplies of water are prime essentials of culture; but especial care must at all times be taken that the soil is never made sour by over-watering, or the result will be—failure.

All who have proper accommodation for growing Gloxinias in the manner suggested will, by the exercise of due cultural care, be rewarded with fine flowering plants next June.—A GROWER.

### A ROSE SHOW AT ANTWERP.

ANTWERP had been *en fête* for three weeks, and among the closing events was a Rose Show held on the 24th and 25th ult. It was held under the auspices of the Cercle des Rosieristes, a Society described by the local papers as among the leading horticultural societies of the country. An English rosarian would under any circumstances have made a point of going, but an additional inducement to our doing so had been furnished to us a few

days before by a correspondent at Van Houtte's of Ghent, that that firm was going to exhibit.

The Exhibition was held in a large room attached to a restaurant, and was well suited to its purpose. It was gaily adorned with Belgian flags. In the centre of the room was a long and wide table, down the middle of which were placed bouquets formed of Roses and called bouquets for weddings, balls and the hand; colossal bouquets, and bouquets remarkable for their form. Prizes were given to the best in each class. The Roses of Van Houtte's firm and those of the leading amateurs occupied one side of the table, the seven large boxes of another horticulturist occupied the other. The Roses at the sides of the room were placed in banks of moss staged against the walls at an angle of 45°. The local papers spoke in high terms of the Exhibition, and an Englishman cannot wish to decry it; but National Rose Shows have made us fastidious, and judging by the standard accepted even in village shows the Exhibition of Antwerp would not lay claim to great excellence. A few points specially noticeable to an Englishman were the number of classes, the arrangement of the Roses, and their value as exhibits. Amateurs exhibited in classes varying from ten Roses to seventy-five, horticulturists from ten to a hundred; and the number of Roses exhibited by the leading firms may be gathered from the fact that Van Houtte took prizes for twelve, twenty-five, fifty, seventy-five, and a hundred; while another horticulturist drew our attention to his twelve hundred Roses staged against the north wall of the room. The Roses were in many cases not exhibited in boxes, but separated by strips of rose-coloured paper pinned to the mossy banks. Many of the Roses were unknown to us even by name, and such a label as "Sofrano du couleur rouge" made one stare. The well-known favorites, Baronne de Rothschild, Capitaine Christy, Etienne Levet, Charles Lefebvre, Marquise de Castellane, and many others were represented, but in a form hardly to be recognised, so wanting were they in substance, colour, and size. As a rule all the Roses were much overblown, and although we saw them early on the first day of the exhibition they were rapidly failing. The method adopted to keep them for the second day was somewhat startling. Syringing was vigorously applied, and our remonstrance was greeted with a shrug and a good-humoured confession, "Probably they will be spotty."—J. M. FULLER.

### AUTUMN PROPAGATING.

In all gardens of considerable extent where bedding plants are required in large numbers propagating in autumn is an operation of great importance, and success in the following spring depends in no small degree upon the efficiency with which it is performed. The flower gardener must now have matured his plans for the ensuing year, mentally at least, and he can then estimate the number of plants that are requisite to the execution of his designs. Some judgment is needed in determining this, for while it is undesirable to have houses and frames crowded with plants considerably in excess of the demand, yet it is well to be on the safe side. In ordinary seasons the present time would be somewhat late for commencing propagating; but the weather we have experienced this year has been extremely unfavourable to such bedding plants as are cultivated chiefly for their flowers, and the consequence is that their beauty will be of sufficiently short duration without being unduly shortened by early cutting. The low temperature at the time of planting-out gave a check to the growth of the plants from which it has taken them some time to recover, and now the abundant rain has induced the production of coarse and succulent shoots that are very unsatisfactory to the propagator. This is particularly the case with *Pelargoniums*, the entire stock of which for the next bedding season is usually propagated in autumn; and when the cuttings are weak, sappy, and long-jointed the difficulties attending their preservation during the winter are considerably increased.

Where the plants employed in decorating the beds are numbered by thousands propagation is more easily, efficiently, and economically effected by having a small house entirely devoted to the purpose, but where smaller numbers are required an ordinary propagating frame will suffice, placed either over hot-water pipes or on a hotbed of manure and leaves. A propagating house may be either span-roofed or a lean-to; if the former it should run from east to west; and if the latter a southerly aspect is the best, so that all the light possible may be obtained. The house should be divided by a glass partition into two compartments, in one of which the propagating is effected, and the other for wintering such plants in that require heat; this division must be provided with a stage so that the plants may be placed near the glass. Both compartments must be efficiently heated so that a stove temperature may be maintained, and glazing should be carefully attended to, as drips are very in-

jurious to the class of plants requiring such protection. In the propagating department pans must be placed over the pipes and kept constantly filled with water, over these place a layer of slates, and then 8 or 9 inches of cocoa-nut fibre or sawdust in which to plunge the pots containing the cuttings, the whole being covered with a frame furnished with lights that can be removed at pleasure. The above remarks only apply to such plants as *Iresines*, *Coleuses*, *Alternantheras*, &c., that require a temperature of 60° to 75°. *Lobelias* are better wintered in a warm greenhouse, and *Pelargoniums* in a frame only sufficiently heated to protect them from frost and damp.

***Pelargoniums*.**—All the varieties with variegated foliage may be struck in the open ground; but the season is somewhat late for this now, and they should have the protection of glass. If cuttings be inserted in a bed of moderately light soil, when they are well rooted they should be taken up and potted in small 60's. It may be well to remember, however, that when *Pelargoniums* are grown for their foliage alone spring propagation may also be satisfactorily adopted. The green-foliaged varieties are generally wanted in large numbers, while the space for wintering them is limited. In this case firm short-jointed cuttings should be selected and inserted in pots, placing from four to a dozen cuttings in each pot according to the size of the pots employed, this usually being determined by the shelves and stages on which the pots have to be wintered, four cuttings according to their size being quite sufficient for one pot. The cuttings may also be inserted in boxes of various sizes. The soil must consist of rich loam and a proportion of sand to render it porous. The pots may then be placed on a firm bottom of ashes in a span-roofed frame; give the cuttings a thorough watering, and maintain a moderately warm temperature until they are rooted, when air must be given freely on every favourable occasion, and watering carefully attended to on fine bright days. Sturdy little plants will be the result, and in early spring these must be potted singly and gradually hardened off.

***Calceolarias*.**—The varieties of *Calceolarias* commonly grown in our gardens are easily increased by cuttings inserted in sandy soil either in pots or beds provided a cool position is assigned to them during the winter, only affording some protection from severe frosts. But the preferable method is to prepare a bed of decayed leaves, loam, and sand, in which the cuttings should be dibbled, place a low frame over them not more than 1 foot or 18 inches high at the back, and the lights should only remain on in wet or frosty weather, a quantity of loose hay forming an excellent protection in case of severe frost. In the spring the plants may be either potted or carefully removed to the beds they are intended to occupy. The first week in October is a good time for inserting the cuttings.

***Lobelias*.**—It is necessary to raise *Lobelias* by cuttings as the varieties do not come true from seed, although the latter method is the quickest and least troublesome. Difficulty is frequently experienced in obtaining cuttings in autumn unless there is a reserve stock, the flower shoots of which have all been cut back to induce early and vigorous growths. If they cannot be obtained in this way the old plants in the beds should be taken up before they are affected by frost, and all the young shoots removed; those at the base of the plant will be the best, and if with a few roots attached so much the better. Prepare a compost of leaf soil and sand, and place it in well-drained shallow pans. Insert the cuttings rather thinly, and plunge the pans in a hotbed under a frame, shading carefully for some days if the weather be bright. When the cuttings are rooted remove the pans to an intermediate house or warm greenhouse, where they can be retained near the glass until spring. Then growth must be encouraged by a higher temperature and frequent syringing, occasionally damping the pipes with liquid manure to promote the evaporation of ammonia, which we have found to stimulate growth considerably, and abundance of cuttings will be easily secured.

***Alternantheras*.**—These and the two following are more successfully propagated in a house such as that previously described, but any position where a stove temperature is maintained will suit them provided a good supply of moisture is kept up in the atmosphere. We have found that autumn-struck cuttings yield a larger supply in the spring than old plants, and the latter very frequently die off in the winter. The cuttings should be inserted thinly in a compost of sand, loam, and leaf soil, 48-size pots being the most convenient. When the cuttings are struck the pots should be placed on shelves near the glass, and watering must be carefully attended to. *Alternanthera amena* is more difficult to increase and preserve than

*A. paronychioides*, *A. latifolia*, or *A. magnifica*. A compost of peat, loam, and plenty of sand appears to suit it best, and we generally employ 60-sized pots, which are preferable to those of larger size.

*Fesines and Coleruses*.—Similar treatment suits both these plants, and indeed they can be readily increased in the same manner as *Alternantheras*, employing 48-size pots and a compost of loam, sand, and leaf soil, the latter being well sifted for all these plants, and the small pieces of wood removed, as they give rise to the web-like fungus which proves so troublesome. We have found that if river sand can be obtained it proves much better adapted for autumn propagating than silver sand, as it is coarser and preserves the soil in a more open condition. The pretty little white-foliaged *Leucophyton Browni*, now so popular in carpet bedding, we have treated precisely the same as *Alternantheras* with success; but Mr. Graham, Superintendent at Hampton Court, has stated in the *Journal of Horticulture* (page 174, vol. xxxvi.), that the only way in which he could succeed with the plant was by dibbling the cuttings in sandy soil in a cold frame. This is the best plan, as the plants grow more freely when bedded out than those struck in heat.

Few other bedding plants require special propagation in autumn except where *Centaureas* such as *C. ragusina* are largely grown, and it is necessary to attend to them as early as possible in the season so as to have them well rooted before winter. We have found them succeed best when inserted singly in sandy loam in 60-size pots. Place the pots in a cool frame and shade for a week or two until the cuttings appear to be producing roots, when water must be very carefully supplied. *Montha Pulegium gibraltarica* may be increased *ad infinitum* by division, wintering it in a cool frame. It need be scarcely suggested that propagating should be no longer deferred, as the days are now shortening, and light is a most important element in securing the chief desire of a propagator, "a good strike."—L. CASTLE.

#### THORNTON HEATH HORTICULTURAL EXHIBITION.—AUGUST 27TH.

THE numerous suburban horticultural societies that have been organised in recent years very significantly denote that popular interest in gardening pursuits is fast increasing; the enthusiasm of the gardener is now shared by thousands, who find in the cultivation of plants pleasant recreation and healthful exercise. Many gentlemen amateurs devote a considerable portion of their time to the advancement of horticulture generally, by their own individual efforts, and by uniting to form societies in which the more energetic willingly undertake the active management. The Society named above is one of this kind, and although only in the third year of its existence, and situated in a district that is not very densely populated, yet it is thriving, and judging by the vigorous and efficient manner in which it is conducted we augur well for its future prosperity. On the occasion of the present Exhibition the weather proved most unfortunately adverse to success, as rain fell heavily throughout the day, but the Committee must comfort themselves with the reflection that such has also been the fate of many other similar exhibitions this season.

The exhibits were generally good, and comprised plants, cut flowers, fruit, and vegetables, the first and the last of which were the best represented, the display of Potatoes being excellent. In the eighty classes that the schedule enumerated about 150 exhibitors entered, including the cottagers. In the classes devoted to plants the principal prizes were obtained by Mr. J. King, gardener to Stephenson Clarke, Esq., Croydon Lodge; Mr. Penfold, gardener to Canon Bridges, Beddington; and Mr. Horton, gardener to H. Moser, Esq., Westwood, Beulah Hill, all of whom exhibited fine specimens. Mr. J. King was placed first and second with four stove and greenhouse flowering plants, his collection including some handsome *Vincas*; but it is unfair to other exhibitors to allow one to monopolise the prizes in this manner, and there should be a stipulation in the regulations that no exhibitor can take more than one prize in the same class. Mr. Horton was first in the groups; the collection comprising *Crotons*, *Pancratiums*, *Dracenas*, *Fuchsias*, &c., gracefully combined and edged with *Gloxinias*, *Panicum variegatum*, and variegated *Hydrangeas*. Mr. J. King followed also with a pretty group, but slightly too formal; Mr. J. Fewell, gardener to J. C. Lanyon, Esq., Croydon, being third with a rather heavy group. Cut flowers were not very numerous nor of high quality. Dahlias were, however, good, and Mr. Minchener of Sunny Bank, South Norwood, was placed first with a collection of twelve handsome blooms, large and well formed. Mr. Penfold, who was second in the same class, also sent remarkably even and clean flowers, but rather smaller than the others. The bouquets and table decoration were of only average excellence. Fruit was shown in very small quantity and indifferent condition.

Vegetables were more abundant, and several good collections were contributed by Messrs. Johnson, Hakeman, Welstead, and Gooch, the latter gentleman exhibiting a remarkably fine collection of Potatoes, for which he obtained six prizes. In addition to the Society's awards for vegetables special prizes were offered by the following firms:—Messrs. Sutton & Sons, Reading; James Carter & Co., Holborn; Daniels Bros., Norwich; Hooper & Co., Covent Garden; and Dick Radclyffe & Co., High Holborn. Among the miscellaneous groups one from Messrs. John Laing & Co., Forest Hill, was very attractive, comprising *Dracenas*, *Palms*, *Phloxes*, &c. Messrs. Hooper & Co. sent a collection of ornamental dried Grasses and Everlasting Flowers. Mr. John Cattell of Westerham contributed cut *Roses*, *Phloxes*, &c.; and Messrs. Dick Radclyffe an artificial rockery and fountain. All the above were highly commended by the Judges.

As on previous occasions the Treasurer, R. T. Oelrichs, Esq., Elm House, very kindly permitted the Exhibition to be held in a portion of his grounds, which are well adapted for the purpose, being convenient of access. Much of the Society's prosperity is due to the exertions of the indefatigable Honorary Secretaries, Messrs. Atterbury and Gooch, and they are cordially assisted by many members of the Committee, particularly Mr. Hakeman.

#### AURICULAS 140 YEARS AGO.

I HAVE been favoured by the Messrs. Sutton of Reading with a list, sent to them by Mr. Parsons of Wootton Bassett, of Auriculas grown in 1744. It was found amongst a lot of old papers, and was sent by a lady of Marlborough, Mrs. Sancey. Of course we would hardly expect to find any of the flowers in the list that are grown at present, although many of the show varieties date back a great many years. The gentleman amongst whose papers the list was found grew 150 sorts, and one would give something to know what varieties they were. Were there amongst them any George Lightbody or Smiling Beauty, or were they merely sorts of no value but the fore-runners of the race which has culminated in the grand flowers of the present day? Had they any woolly aphids or mealy bug, which I perceive according to a contemporary has appeared in several collections? And one would like to have known something, too, of the individuality of the writer of the list. She must have been an enthusiast, and I daresay loved her Auriculas as much as any modern cultivator. She wrote a hand, too, which displays a good firm character, and I have no doubt she was much in and out amongst her pets, and could give her gardener if he had been careless a good wiggling.

The gentleman who furnished the list mourns over the decadence of the taste in the south. Even forty years ago there were, as I know from a list which I have seen, nearly forty or fifty exhibitors of the Auricula where now we have only six or seven. Subjoined is the list alluded to.

Arcthusa	Upton's Seedling	Savage's Alexander
Cleone	Lord Willoughby	Dunkirk
Dulcinea	Dutchman	Queen Dowager
King of Prussia	Duke of Gloucester's	The Sultana
Gustavus Adolphus	Star	Pompey
G. Sarum, 1743	Duke of Leeds	Sir Robert Walpole
Elvira	The Tacker	Petter's King
Northern Lass	Mr. Marcham	Savage's S.
Painted Bride	How's Seedling	Fairy Queen
Dorinda	Duke of Richmond	Lord Letchmere
Old King of Prussia	Glory of the East	Quadruple Alliance
Glory of England	Duke of Savoy	Mrs. Savery
Charles III. of Spain	Semiramis	Mason's Glory
Maiden Queen	Lord Leinster	Glory of Holland
Hubert's Seedling	Bishop of London	Holt's Widow
Mr. Gough	Tiberias	Welton's Fine S
Driver's King	Witch of Endor	Cains Marius

—D., Deal.

#### POTATO DISEASE.

I AM sorry to have to report that Potatoes are badly diseased, especially the early varieties: Early Ashleaf, Myatt's Prolific, and Early Rose have suffered severely. It is many years since they were so badly attacked with the disease so early in the season. The crops generally are good as regards quantity and size, but many plots that have not been taken up in time are scarcely worth the trouble of lifting now. I fear the late varieties will also be bad, and I strongly recommend that all late varieties be at once lifted if there is the slightest symptom of disease in the haulm. Never mind if the skins are loose and rub off a little: the tubers will form fresh skins, and will be none the worse for eating purposes a few weeks hence. I advise the lifting of all Potatoes that are considered large enough for table use, even if the tops are as green as Leeks. Great mistakes are often committed after the Potatoes are lifted in storing them away in too large heaps. They should be stored

away thinly in cool open sheds having a north aspect, the tubers being looked over at frequent intervals for the prompt removal of any that are tainted.

I am afraid that Potatoes will be both scarce and dear in the spring, that is if they are as badly diseased in other counties as they are here (Beds). All who have vacant plots of ground will do well to have a batch of winter Spinach and other useful crops put in as soon as possible, the Cottagers' Kale and Asparagus Kale being useful and hardy. It is not yet too late to plant late Broccoli, the heads of which will be found very useful in the spring.—G. R. A.

### THE SEASON AND ROSES.

TAKING all things into consideration Roses perhaps have disappointed us less than most other plants that have experienced the trials of a remarkable winter and yet more remarkable summer. The season of flowering was generally late, with us specially so. Even old-established trees did not come into bloom till quite the end of July or beginning of August, whilst at this date towards the end of the month I am still waiting for some amongst the last autumn-planted Teas and Hybrid Perpetuals to show their colours.

But Rose blooms on the whole with us were very beautiful and very continuous, notwithstanding the failure amongst the pale Roses, of which so many decayed. As for the dark Roses they were glorious; and several of a class not generally velvety, such as Beauty of Waltham and Madame Charles Crapet, showed deep and unusually rich shadings. It was impossible to give liquid manure of any kind; but when one or two days of hot dry weather came we applied a surface dressing of stable manure which the quickly returning rains soon washed in, and the results to the Roses were most satisfactory. La Rosière, Duke of Connaught, Sultan of Zanzibar, Jean Liabaud, Prince Camille de Rohan, and Baron de Bonstetten were very rich. Duke of Edinburgh was in grand form, fuller than usual and dazzling in colour. Abbé Bramerel, often rather small in petal, attained an important appearance. Black Prince could not reconcile himself to the wet; the only year he has ever failed.

Amongst the very pale Roses Madame Hippolyte Jamain was very perfect, charming by her faultless form and the exquisite transparency of the petals. Of coarser Roses Paul Neyron and Alfred Mouton were most striking in size and effective in colour. Amongst the ladies Madame Charles Wood, Madame Victor Verdier, Madame Marie Rady, Marie Finger, and others which I cannot ask space to name, have been and are still floriferous. On many trees the late deluging rains have damaged the coming blooms, many being quite disfigured, and the buds extensively spotted with mildew. Aphids appear here and there where there has been excessive growth, but of earwigs I do not think I have seen a dozen all the season.—A. M. B.

### CHIRK CASTLE TURNIP.

THE last sowings of Turnips are now being made, and the work receives special attention from the importance wisely attached to obtaining a crop of sound medium-sized roots that will stand the winter and continue in good condition late in spring. For the earliest sowing in March and successional crops till the middle of August I prefer Snowball, but for the late sowing there is nothing like Chirk Castle. It is not a large Turnip, and has a black rough skin anything but tempting in appearance, but is nevertheless a veritable rough diamond, the removal of the objectionable skin revealing a root as crisp, succulent, and white as can be desired, and singularly firm in texture, hence probably its hardness and property of keeping so well. The moderate size to which it grows admits of the plants being left thickly in the bed, a good plan to follow with all late-sown Turnips, the clustering leaves then serving in some measure to screen the roots from frost. The bed of Chirk Castle is always three or four times the size of ordinary sowings, for the obvious reason of the greater and more continuous supply that is required from it at a season of the year when dishes for which this valuable esculent is needed are much in demand.—EDWARD LUCKHURST.

CANDYTUFT FOR POTS.—Where the new hybrid Candytuft has once been grown in gardens and allowed to stand and seed, seedlings will come up freely. It would be well to lift some of these seedlings now, and place them in small pots

allowing them a shady position outside for a few days, then placing them where they can enjoy plenty of light and sunshine. When the plants want more root room they should have 4 or 5-inch pots, which are large enough to flower them in. The flowers vary from pure white, light and dark lilac, to almost purple, &c. These plants if housed at the first appearance of frost will reward the cultivator with a magnificent show, and make the greenhouse attractive and gay for a long time. The flowers are very useful for cutting, and last a long time in a cut state.—SCIENTIA.

### CRYSTAL PALACE FRUIT SHOW.

AUGUST 21ST, 22ND, AND 23RD.

OWING to the excessively unfavourable weather for fruit growing this season, and to the fact that the date of the Exhibition was a month earlier than last year, it is not surprising that the exhibits both in quality and numbers were much inferior to previous displays. Grapes were far the most numerous, there being staged in the ten classes devoted to them over forty collections. The white varieties were generally very unripe and small, but many of the black varieties were well finished in colour and bloom although not fully ripe. Peaches were well shown, especially Royal George, some of which were extremely handsome fruits. Nectarines were few but fairly good, and the same remarks apply to Pines and Melons. Apples and Pears were only represented by a few dishes of small and unripe fruits. Of Cherries only a few dishes of Bigarreau and Morellos were exhibited, and Plums were very scarce, but in most cases well ripened. As already notified the projected show of cut flowers was wisely relinquished, for the display would have been of a very insignificant character. The exhibits were arranged on long tables, down the centre of which were grouped Palms and other plants that served to pleasantly relieve the otherwise monotonous and flat appearance of ordinary fruit shows. Several bright groups from the principal nurserymen were contributed, the most noticeable being Messrs. Kelways' collection of Gladioli and Messrs. W. Pauls' cut Roses.

There were only three competitors in the class for a collection of twelve dishes of fruits, and Mr. W. Coleman, Eastnor Castle, Ledbury, obtained the premier position with well finished handsome specimens. His Grapes were Black Hamburgh and Muscat of Alexandria, the former of medium size, but both were excellently ripened and bearing a fine quantity of bloom. Royal George Peaches and Pitmaston Orange Nectarines were exhibited in good condition, also a dish of Kirke's Plum. The Melons were Golden Gem superbly ripened, and Dr. Hogg rather inferior. Pines, Charlotte Rothschild and Prickly Cayenne, even and good. A dish of fair Bigarreau Cherries and one of Brown Turkey Figs completed this beautiful collection. Mr. George Sage, Ashridge Park Gardens, Herts, was placed second with a fair collection, the most noticeable fruits being the Royal George Peaches extremely fine, Elruge Nectarines well ripened, Brown Turkey Figs, and a small bunch of excellent Bananas. The Grapes were of rather inferior quality. The remaining prize was awarded to Mr. David Wilson, gardener to Earl Fortescue, Castle Hill, South Molton, North Devon, in which collection were very fine Gros Colman Grapes and a good Colston Bassett Melon. In the next class there were more competitors, for six collections of eight dishes were staged. Mr. Wm. Allen, gardener to Lord Suffield, Norfolk, obtained first honours with large bunches of Muscat of Alexandria rather imperfectly ripened; Gilbert's Netted Victory of Bath, thoroughly ripe, of medium size, but very sparsely netted; Bigarreau Napoleon Cherries, excellent Moorpark Apricots very good, and other fruits of inferior quality. Mr. G. Miles, Wycombe Abbey, Bucks, followed, the Muscat of Alexandria and Morello Cherries being the best in his collection. Mr. Thomas Jones, The Gardens, Elvetham Park, Winchfield, was third. The Violette Hâtive Nectarines in this collection were noticeable for their fine condition.

Grapes, as we have already observed, were abundant but not distinguished by a very high state of perfection, especially Muscat of Alexandria, Buckland Sweetwater, and Foster's White. Madresfield Court, Black Hamburgh, and Gros Colman were better finished, and in some cases unusually good. The principal class was the one for ten distinct varieties two bunches of each, and there Mr. W. Elphinstone, gardener to E. M. Munday, Esq., Shipley Hall, Derby, secured the highest award. The varieties were Golden Queen, fair in size but unripe; Buckland Sweetwater, berries small but ripe; Muscat Hamburgh, well finished; Black Alicante, fair quality; Gros Colman, bunches small but handsomely finished; Muscat of Alexandria, berries small and not ripe; Madresfield Court, of average excellence; Foster's White, partially ripened; Black Hamburgh, small in bunch and berry and rather rough. Mr. Thomas Bannerman, gardener to Lord Bagot, Rugeley, was the only other exhibitor in this class and obtained the second place, but his fruit was very deficient in quality. The varieties were chiefly the same as the last, except the following: White Tokay, Lady Downe's Black Prince, and



Duke of Buccleuch. For a collection of five varieties Mr. Thomas Jones was first with rather poor fruit; Madresfield Court was the best, but even that was far from ripe. Mr. G. T. Miles was second with imperfectly ripened fruits but good varieties. These were the only two exhibitors.

In each of the remaining classes two prizes only were offered. Mr. W. Coleman was first with three bunches of Black Hamburg well finished; and Mr. Wm. Nash, Badminton Gardens, Chippenham, was second with small bunches. The competition was strong in this class, for there were twelve exhibitors. Mr. Wm. Coleman was again first with Muscat of Alexandria; bunches large and handsome, berries also good but not ripe. Mr. Walter Johnston, gardener to the Marchioness Camden, Lamberhurst, Kent, the only other exhibitor, was second with inferior bunches. For three bunches of Gros Colman the prizes were awarded to Mr. George Tucker, gardener to J. L. Lovibond, Esq., Farnborough, and Mr. T. Bannerman, the first being very good. There were three exhibitors of Madresfield Court; Messrs. J. Peed & Son, Roupell Park Nurseries, Norwood Road, being first with well-finished fruit of moderate, and Mr. C. J. Goldsworthy, Betchingley, Surrey, second with larger bunches but not well ripened. Mr. H. Folkes, gardener to T. F. Halsey, Esq., M.P., Hemel Hempstead, was first with Black Alicante, very fine and ripe; while of the two remaining exhibitors Mr. W. Nash was awarded the second prize with fruit but little inferior to the first. In the class for three bunches of any other black variety than those provided for specially there were seven exhibits. Mr. W. Elphinstone obtained the highest award with moderately good bunches of Muscat Hamburg; and Mr. W. Coleman was second with Venn's Seedling, small but well finished. In the corresponding class for any other white variety Mr. H. Folkes staged fair samples of Buckland Sweetwater and secured the honours; Mr. Frank Jordan, gardener to Birket Foster, Esq., Witley, Surrey, being selected from seven exhibitors to receive the second prize for Foster's Seedling, rather small in berry but bunches large. Prizes were offered for the heaviest bunches, and Mr. Frank Jordan obtained the chief award with a bunch of Black Hamburg weighing 5 lbs. 4 ozs.; and Mr. O. Goldsmith, Polesden Lacey, Dorking, was second with Trebbiano weighing 3 lbs. 6 ozs. Neither were well ripened.

Pines were few but good. Mr. G. T. Miles was first with a fair Queen; Mr. D. Wilson secured a similar award for a fine Smooth Cayenne; Mr. G. T. Miles being second with a smaller fruit. In the class for any other variety there were three exhibitors, and Mr. W. Coleman was placed first with a remarkably handsome well ripened fruit of Charlotte Rothschild, Mr. D. Wilson following with a good fruit of the same variety. The latter was the only exhibitor of three dishes of Peaches, and he obtained the first prize with Alexandra Noblesse, Belle Beauce, and Crawford's Early, all very good. The same exhibitor was first with three dishes of Nectarines—Pitaston Orange, Early Newington, and Lord Napier, of medium size but ripe. Mr. W. Bannerman followed with a collection very close to the former in quality. There were ten entries for one dish of Peaches, Mr. George Sage obtaining the first chief award with a dish of remarkably handsome Royal George. Mr. W. Goldsmith received the inferior prize for good fruits of Princess of Wales. For a single dish of Nectarines only two competitors appeared. Mr. J. Fry, gardener to T. G. Baker, Esq., Haydon Hill, Essex, obtained the first place with excellent Pineapple Nectarines, and Mr. J. Woodbridge followed.

Two classes were devoted to Melons, one for Green-flesh varieties and the other for Scarlet-flesh. In the former Mr. George Sage obtained first prize with a large and ripe Eastnor Castle; Mr. T. Bailey, Shardloes Gardens, Amersham, being second. Four exhibitors. In the other class Mr. W. Carmichael, Newton Court, Bury St. Edmunds, was first with well netted Victory of Bristol, and Mr. W. Coleman followed with Dr. Hogg, small but ripe. Nine entries. Mr. G. Sage was placed first with three dishes of Figs—Lee's Perpetual, Barnissotte, and Blanche, all ripe and good, the only exhibit. There were four entries in the class for one dish of Figs, and Mr. W. Coleman obtained the honours with a dish of excellent brown Turkey, followed by Mr. G. Sage. Mr. James Fry was first with three dishes of Plums, comprising Emperor, Golden Gage, and Kirke's, all fine; Mr. W. Fanning, The Convent Gardens, Roehampton, being second with fair fruits. Mr. T. Jones with a dish of excellent Green Gages, and Mr. W. Fanning was second. Three entries. Apples and Pears were so small and unripe that they do not merit being noted in detail.

For a dish of twelve Tomatoes Mr. James Worthing, The Gardens, Chadwell Heath, had a dish of excellent fruits of the variety Trophy. He was placed first, and Mr. Phillips, gardener to Captain Jackson, The Deodars, Meopham, followed with Aome, also good. Five entries. There were seven entries in the class for a brace of White Spine Cucumbers, Mr. John Davey, gardener to Mr. Drew, Streatham, being first, and Mr. John Worthing second with seedlings, both neat and good. For a brace of Black Spine Mr. Phillips was first with Carter's Model, excellent both in form and bloom; and Mr. G. Roach, gardener to D. B. Price, Esq., Honor Oak, Forest Hill, was second with Reliance, good but rather large. Mr. W. Williamson, gardener to C. W. C. Hutton, Esq., Belair, Dulwich, was first with a brace of

smooth Cucumbers; the variety was Telegraph, even in size and good. Mr. W. Roots, gardener to W. F. Hughes, Esq., Elmsleigh House, Sutton, was second with small fruits. There were only three competitors in this class, and in fact Cucumbers were not by any means numerous nor of extreme excellence.

Miscellaneous collections of plants and flowers were exhibited, and extra prizes were most deservedly awarded for them. Messrs. Wm. Paul & Son, Waltham Cross, sent twelve boxes of excellent cut Roses; Messrs. John Laing & Co., Forest Hill, contributed a large and graceful group of Palms, Dracænas, Phloxes, and Ferns; Messrs. Kelway & Son, Langport, had a large collection of Gladioli similar to that exhibited at Kensington on the 26th ult. First-class certificates were awarded for the following varieties, the three first of which were described on page 170—Duke of Connaught, Duchess of Connaught, Jessica; James Douglas, delicate pink with white and rose streaks, large flower and dense spike; Lord W. Beresford, rosy crimson streaked with white, extremely large flowers and spike. Messrs. Hooper & Co., Covent Garden, exhibited a collection of dried Grasses and Everlasting Flowers; and Mr. Thomas Laxton showed a collection of new Peas and extremely large Beans from his Experimental Gardens at Girtford, Bedfordshire.

### SILVER-SKINNED VERSUS QUEEN ONION.

THE Queen Onion has been highly spoken of as being a very valuable and quick-growing variety. Having this season grown both the varieties named side by side under exactly the same conditions as to soil, &c., I have found the Silver-skinned the earlier, and it has also produced the better shaped bulbs, assuming that I have the true variety of Queen, which I have no reason to doubt, as the seed was obtained from a trustworthy source. To further test the two varieties I again sowed them side by side. It may not be generally known that the Silver-skinned Onion is a good variety for autumn sowing, as it is very hardy and comes in earlier in the spring than any other that I have grown. So many rival varieties are cropping up year after year that I think we should endeavour to prove the genuineness of the new arrivals before discarding the old and tried sorts.—G. R. ALLIS.

### QUILLED ASTERS.

I KNOW of no flower that will better repay for a little trouble in cultivating than the above, as a fine display of bloom may be easily obtained from the first week in August to nearly the end of November. The seed should be sown about the middle of April in light rich soil, placing the seed pans in a cold frame. When the young plants appear give abundance of air to ensure sturdy growth, and when they have made the rough leaf prick them off, finally planting them out when about 3 inches high. I plant in rows 1 foot between each plant, and 20 inches between the rows. The self colours such as Snowball, Purple Prince, and Princess Alice are at least a fortnight later in blooming than the fancy varieties such as Princess Alexandra, Grand Duchess Marie, or Unique.

When the plants are about 6 inches high I place stakes to them 3 feet high, and apply about a tablespoonful of Amies' manure to each plant, and stir it carefully in with a pronged trowel or light fork, being specially careful of the roots which will be found very near the surface. If kept well tied to the stakes it is astonishing what an amount of rain and wind the plants will endure without serious damage. Asters are very effective in lines with a background of shrubs. A good arrangement would be: First row Purple Prince, second Snowball, third Princess Alice, and for the fourth either Prince of Novelties, Princess Alexandra, or Unique. At the season of flowering I prefer to pick out the centre bud, as the later blooms are generally better formed; but I do not even for exhibition purposes disbud freely, depending for good blooms entirely on rich soil and careful watering. To ensure success maintain a free growth by means of stimulants. Three ounces of guano to two gallons of water will be found to improve the substance of the flowers greatly.—PEDAGOGUE.

LATE KIDNEY BEANS.—Many of our small plant frames, which were filled with Melons and Cucumbers in May last, are now being emptied, and refilled with a little fresh loam and manure in which to plant Dwarf Kidney Beans. These are placed in rows a foot asunder, the seed being 2 inches apart in the rows. Osborn's Forcing is the variety we prefer for this work, as it grows dwarf and bears freely. So long as the weather remains mild the lights will not be placed on the frames, and if all goes well we expect to gather many dishes

from the plants during November, when all Beans in the open have decayed. I can answer for this being a safe and simple mode of securing late Kidney Beans, and all who care for this delicate vegetable and have empty frames at the present time cannot do better than utilise them in the manner indicated.—  
A KITCHEN GARDENER.

### ROSES IN FORFARSHIRE.

CROSSING the Border at the right time has this clear advantage, that you obtain not only grouse, but under favourable circumstances two summers (possibly two winters might be more the expression this year). Strawberries and Roses all over again. Eight hours and a half by the excellent "Flying Scotchman" from King's Cross will land the southerner in Edinburgh, that most picturesque of cities, and then "the world is all before him where to choose," or if he is bound for some hospitable big house so much the better for him. Coming from the south I am always astonished at the gardens of Perthshire. The sweet Rose Mdle. Bonnaire, which I never can coax into excellence, is there quite robust. But situation is everything. A friend, who resides not far off on a windy hill, describes Boreas as occasionally tearing Cabbages and Box edging up by the roots, and raising the gravel on the drive into various little heaps.

And then the winter. Last year, in Forfarshire, the keeper one day in October put down 150 rabbit traps; that night they disappeared, and were not recovered till the following May, with the fluffy fragments of the unfortunates which were captured that evening. The snow was so deep that on one estate the trees were barked 8 feet up by the rabbits, which, raised up on the snow, ate also the bowed down branches. Up the glen I heard of an old woman having died at her son's house, and the funeral having to be put off for a month, and when the cottage was approachable sixty men had to come and cut a pathway for the coffin half a mile to the kirk yard!

I have been visiting a Rose garden in a most sheltered spot, approached by a two-miles drive through Firs faced with Rhododendrons. Within the garden walls a lower wall crosses, and along this is the choicest Rose border. The "leddy" laird is not a little fond and justly proud of her Roses. There is Mons. E. Y. Teas plump and promising; also Duchesse de Vallombrosa, President, Adam, and Souvenir d'un Ami, with Maréchal Niel, are fine against the wall; and then the dear old friends! Banks of the old red Provence, a maiden blush standard thirty years old; the Persian Yellow, more like a bush than a plant; the white Cabbage, and an older white, which may well have helped the cockades of the rebel laird in "45" (N.B.—He had half a year in a cave in consequence before he escaped to Holland). Also all the Mosses are in great force, that effusive Bourbon Armosa, now so rarely seen, and the old York and Lancaster still celebrating the subsiding of the wars of the Roses. La Brillante I have been particularly pleased with; it is of fine colour and free habit. I wonder whether it will get into Mr. Hinton's garden Rose list?—A. C.

### NOTES ON STRAWBERRIES.

As Strawberry matters are still to the fore I write a few lines in answer to "AMATEUR, Cirencester," who has, I hope, also received a private letter from me. He is mistaken about my soil. There is oolitic lime just above me, but in my garden I have not a particle of lime, though only 200 yards in front of my house the limestone rock begins. My garden and house, &c., stand on what I believe to have originally been the edge of a great inland lake. We have 15 to 20 feet of pure sand under 3 feet of soil, but on the top of the sand is a bed of gravel from 6 or 8 inches thick. In this gravel there are debris of the oolitic limestone, but by no means a large proportion. I am now laying down a concrete lawn tennis ground, and to obtain the gravel and sand to put on the top of the stones I merely have to dig a large hole on one side the ground, and after throwing out from 3 to 3½ feet of earth I find the gravel and sand. I enter into these particulars because "AMATEUR, Cirencester," seems to fall into a mistake about my soil merely because a great portion of the range of Howardian hills are oolitic; but we have very variable stratifications here, and very little north we come to beds of Kimmeridge and Oxford clays. So much about soil, which will in a measure account for a wet season not injuring my crops to any extent.

As to Dr. Roden's Strawberries, which he kindly sent me on trial, many of them are well known now, but the following is my estimate of the varieties.

*Alpha*.—Very prolific and highly flavoured. In the opinion of many the best-flavoured Strawberry I had this year.

*Early Prolific*.—Early and good. This is well known now.

*Duke of Edinburgh*.—Very good, but somewhat uncertain.

*Early Crimson Pine*.—A great favourite of mine, which I shall certainly propagate extensively.

*Hundredfold*.—Prolific, but not equal in quality to last.

*Amy Robart*.—Very good; high-coloured.

*Crimson Pine*.—Another very good Strawberry; in flavour rather sharper than Early Crimson Pine, and later.

*Sir John Falstaff*.—A fine Strawberry, good bearer, and with me a late sort, but not so late as Traveller, Rivers' Eliza, or Coxcomb.

*Gipsy Queen*.—Better this year with me than any other year.

*Excelsior*.—Fine colour and of good form; good quality.

*Bonny Lass*.—A good Strawberry, but not quite so good as some of the others.

*Enchantress*.—This is the only one which has not succeeded with me, but has rather deteriorated, the fruit being too small.—C. P. PEACH.

"AMATEUR, Cirencester," in a reply last week to Mr. Peach concerning Strawberries, speaks rather satirically, it would appear, as to my promise to produce some later varieties of that fruit than any at present in cultivation. The impression on my mind is that I started on my mission of raising new varieties, in the hope that I should rather improve the quality of both early and late sorts. I may also have aspired to raising some later varieties than any in existence. However that may be, if "AMATEUR" has kept pace with the times he should have perceived ere this that with regard to early varieties Black Prince, which is quite early enough for our climate, has been surpassed if not almost supplanted by Amy Robart, Alpha, and Hundredfold, all of which are nearly, and in some seasons quite, as early as that variety, and the former of which especially I regard as the best early variety in cultivation, whether as to season of ripening, size, cropping, or flavour; better also than the so-much vaunted Garibaldi, which I grew some fifteen years ago under its earliest name of Marquise de Latour Maubourg. It is no discredit to that Strawberry to say that it has since received various other names, such as Duchesse de Trévise, Vicomtesse Héricart de Thury, and Prince Imperial; but Amy Robart will well compete with it, as being earlier, larger, quite equal in flavour, a heavier cropper, and an equally good forcer. Of course I speak of my own soil and situation, but surely many have a better Strawberry soil than I have; whilst as to a second early (I place Sir Joseph Paxton as a third early) there is no Strawberry of its season to equal Early Crimson Pine. I have had this acknowledgment from all parts both at home and abroad.

Then as to late varieties, my friend's topic, I maintain that Enchantress and Excelsior are manifest improvements, the latter by its runners if allowed to run at will continuing to bear fruit till frosty weather commences; whilst Mrs. Laxton, partially issued late last season but now being more fully supplied, is decidedly late, and much more delicious than Elton Pine and Eleanor. "AMATEUR" cannot, I fear, be keeping *au courant* with these matters and trying these novelties for himself, but is rather waiting for the dictum of others.

I have never claimed for my seedling Strawberries perfection, nor do I wish to speak in terms of self praise further than is necessary for my own protection; but if I have made ever so small an advance in the right direction it is scarcely charitable on the part of any horticulturist, much more of a brother amateur, to throw cold water on the efforts of others.—WM. RODEN, M.A., M.D., Kidderminster.

### SANDY AND DISTRICT HORTICULTURAL SOCIETY.

THE eleventh annual Exhibition of this Society was held on Friday last, under exceptionally favourable auspices as regards the weather, in the grounds of J. N. Foster, Esq., at Sandy, the capital of the agri-horticultural district of Bedfordshire. The Show was, considering the season, in all respects a great success, and it is feared but few other societies can this year compare results favourably with the Sandy Show, as many of the smaller and less-supported exhibitions will, after the season of 1879, succumb from the effects of adverse weather, financial results in most cases being very unsatisfactory.

The scope, too, of the Sandy Society, which includes sections of

result in crops of all kinds, whether of grain, pulse, or vegetables, has been found largely in favour of the former. The next comparison we must make will apply to a home farm where the chief portion of the farm is in pasture with only a limited area of cultivated land; and, in case the labour can be obtained, spade culture, where deep cultivation is a necessity, will be found far more advantageous than the plough culture. Whether the cereal portion of the crops or roots are most required, it must be remembered that not only the greatest weight of roots per acre will be obtained, but in the cereals the amount of straw grown will be most abundant; and this last is an important point where only a few acres are grown, more especially in connection with an extensive area of grass land. This leads us to another point connected with the subject, for at present, although hand labour is more expensive than it used to be, yet the same argument applies to animal or horse power, for the animals themselves cost more than formerly, and so do harness, shoeing, &c. When it is considered that in spade culture the whole requirements relating to tillage are simply the spade or the steel fork, the rake, and a wheelbarrow, &c., this is a small matter when it is compared with the various implements required for tillage by horse labour, and also the feeding of the horse, its first cost, its annual decay, and the various accidents to which it is exposed. There are also other matters to be looked to, such as hindrance by bad weather, &c.; these, although only collateral, are nearly all in favour of the spade. We give, however, no money comparisons because the price of labour and other items vary in different districts.

We will now refer to deep culture as connected with farms of considerable size and large areas of arable land; in fact, this is a large subject, requiring great experience to decide the many and various points which will arise for consideration upon the practical carrying-out of deep tillage of the land. We have noticed many instances where ditches have been filled in that the corn or roots always grow with great luxuriance in such cases. The home farmer will have also frequently seen the same results, and this will always be the means of calling attention to the advantage of deep culture. The first kind of soil we will refer to is clay or strong loam, and if such land is too wet and requires draining—which is often the case, particularly where it lies flat and level—draining should always be effected before deepening the tillage, because if the land is stirred deeply before draining, it only deepens the basin and enables the land to hold more water without providing for its escape, which makes it more unfavourable for the growth of crops. In soils with a porous substratum it is, however, just the reverse, for it often happens, particularly where the subsoil is composed of gravel, that there is just beneath the level where the plough has been accustomed to work a hard iron-bound conglomerate of gravel quite impervious to water, rendering the land too wet in the winter and too dry in the summer. When this is broken through by subsoiling, the water can sink down freely, at the same time capillary attraction occurs, giving full assistance to plant life during the summer months. It is, perhaps, difficult to say how deep the land may be stirred with advantage; one thing, at any rate, is certain—that whenever the subsoil varies much it is desirable to render the land as much alike as possible in its productive capacity by deepening the soil throughout, in order that the patches of shallow land with impervious substrata may be made as pervious to the roots of plants as the best land so formed by Nature. An erroneous idea sometimes prevails that it is not necessary to deepen the tillage for the ordinary crops of the farm; but why not? It cannot be said that the roots of the cereals will not go down as deep as the market gardeners' crops, and strictly speaking the farm crops of mangold, Swedes, and carrots dive down equally deep into the soils as the crops grown by the market gardener. To illustrate this matter we have taken up the roots of wheat and oats which have penetrated the soil to the depth of 5 or 6 feet, the roots of red clover to 8½ feet, white Belgian carrots and Swedish turnips to 5 and 6 feet, and in all probability the small fibrous roots which would break off in lifting the bulbs, &c., go much deeper when the subsoil is naturally loose or made so by mechanical means. In ploughing land in the usual manner the soil is not moved more than about 4 or 5 inches in depth, except in winter fallowing it may sometimes be ploughed 6 inches deep.

There is one thing we have often noticed. When we have been looking over land in various districts, and when we desired to see what the land was capable of, we have invariably examined the cottagers' gardens, and we hold that whenever cottage gardens are productive the adjoining lands may be made so likewise. Nor is this a question of manure, for the farmer often has an almost inexhaustible supply, whereas the labourer depends chiefly upon the depth of tillage; in many cases moving the land two spits deep, still keeping the best soil on the top. In fact, taking the mode of cultivation generally, the home farmer should remember that the utmost limit of production is not to be obtained by manure alone, but by a well-regulated system of liberal manuring accompanied by deep and effective tillage of the land. Again, whenever it is proposed to cultivate deeper than usual the work should be commenced by deep ploughing or digging during the early winter

months when fallowing for root crops, &c. The newly-broken soil then becomes mellowed by the winter frost and alternations of the weather, and is then in a fit state to become mixed with the other portions of the furrow slice in the after-ploughings during the spring and summer months. We know that it is frequently said when land is more deeply cultivated that more manure is required; but that is not the usual effect, because it is well known that a given quantity of manure will produce far better results combined with deep cultivation. On soils which may have been chalked formerly, and the chalk having, as a considerable portion usually does, sunk into the subsoil, this by deep cultivation is exposed to the action of the atmosphere and brought into use, instead of lying inert in the unmoved substratum. Again, it is often supposed that manure should not be buried too deeply in the soil, as the roots of corn cannot have the full benefit of it; but this is a great fallacy, as the depths which we have stated that the roots both of corn and vegetables descend into the subsoil will prove. With regard to the means of effecting deep cultivation to be obtained by the home farmer, it will depend much upon the extent of the arable land. Upon small occupations it is open only to the use of such implements as were formerly used—namely, the subsoil plough, intended to stir the subsoil alone. This implement usually follows the ordinary plough, and breaks up the pan or hard subsoil without bringing it to the surface, but it is laborious work for three horses, the top furrow having been turned with two horses. This work is, however, expensive, and upon occupations of considerable extent steam power should always be used in a way to be explained in our next article.

(To be continued.)

#### WORK ON THE HOME FARM.

*Horse Labour.*—The horses have lately, since the improvement in the weather, been employed in drilling turnips, and this work will no doubt be continued where only a short root lain has been provided for. Late as it is turnips may yet be drilled after rye, winter oats, or the early white oats with a fair prospect of obtaining a useful crop, particularly if the Grey Stone or Early Six Weeks are drilled with a liberal application of superphosphate and ashes. Although the roots would most likely be rather small, yet, if the seed is drilled at 14 inches between the rows and the plants left thick in the rows, a fair crop may be obtained, more especially if the autumn and early winter months should prove open and mild. When the turnip seed is drilled after a cereal crop as fast as the corn is cut, by ploughing, &c., between the rows of shocks or pooks the land is always moist, soft, and kind, and in much better condition than it often is after a fallow in a summer like the past, and also much freer from the insect enemies to the young plants. In the early districts the harvest will commence by reaping wheat in a few days—in fact, it may be said to have already commenced in a few cases of Talavera, Australian, and the early varieties of wheat sown early. It will this year be extremely important to sow trifolium as early as possible after the corn is cleared, in consequence of slugs being so numerous, for we have never seen them more abundant than they have been during the past summer, and quantities of young mangold plants as well as other roots have been entirely destroyed. A friend asked our opinion upon the policy of sowing trifolium upon a clean fallow instead of after a corn crop, where so many slugs were sure to prevail after harvest; and further asked the best method of sowing, &c., upon fallow land. In reply we stated that there would certainly be a better chance of avoiding the slugs, the only enemy of any consequence, by sowing upon a fallow preparation, provided that at least 25 lbs. of seed per acre be sown, the land being rolled with the ring roller, and after sowing harrow once or twice with the chain harrow; this will not only insure a firm bed for the seed, but the seed will not be buried too deeply but with regularity.

*Hand Labour.*—Hand-hoeing and horse-hoeing must be continued every fine day, as the weeds have not died after the hoeing as they do in ordinary seasons. We will suppose that by this time all the work of the farm has been forwarded in anticipation of the harvest, so that there may be no delay when it has been commenced. This is more especially necessary in this the latest harvest we have ever known, and anyhow it must prove an expensive one, because the length of the day is fast diminishing and the hours for work decreasing. It often happens when the harvest is unusually late that the corn is not ready for stacking so early in the morning, nor can the work be continued so late in the evening as when the harvest happens a month earlier. September and October are difficult months in which to provide a sufficiency of green fodder for dairy cows and cattle fattening under cover in the boxes; clover, however, may still be available for cutting and soiling cattle and working horses, and where trifolium, or vetches with rape, had been sown in May and June these crops will now prove extremely valuable. One of our tenants showed us the other day a capital piece of white Canadian oats nearly fit to cut with a fine plant of broad clover at the bottom, and we advised him to cut the oats above the clover, in order that the latter may spring up and furnish a crop fit for soiling cattle soon after harvest, it being good food until the first

frosts commence. In this way for a long series of years we have provided for cattle and horses in the autumn whenever the season has been favourable. The mangold of the previous year's growth will in most cases have been used up by the first week in November; the new crop will then be fit for feeding, for we never hesitate to use mangold at any period of the year, but we always feed with moderate quantities. We have found in our own practice ever since this root first came into use that they are as safe as any other root food for both cattle and sheep at any period with proper quantities of hay or corn, and if used with judgment and discretion.

### JUDGING AT POULTRY SHOWS.

It is not long since there was a general outcry among fanciers about the paucity of poultry judges. It was supposed that there were few if any fanciers, besides the very few who then officiated at the great shows, who were competent to judge anything like a fair exhibition. Some half dozen judges, several of whom had had constant practice in their duties for over twenty years, had justly acquired great celebrity. The committee of one show followed the lead of another, and thought it absolutely necessary to secure the services of one of these gentlemen. Committees, too, were very exigent, and having got hold of them thought that no amount of work could be too great for them, so quick were their eyes and rapid their decisions. This was extremely unfair upon them. We have seen judges at the end of a long and laborious day poring anxiously into dark pens while assistants held flaring tallow candles, or allotting prizes to birds of delicate colours by the dim gaslight of Bingley Hall. The natural result was that they were terribly overdone, and that very frequently their awards by no means gave the general satisfaction that they formerly had given. A thoroughly tired brain cannot possibly make the fine discrimination that one fresh to the work can, neither is the human mind able to be as calm and collected in the bustle of an open or partially open exhibition as in the earlier hours when all is quiet.

What was to be done to remedy this difficulty? The poultry fancy had outgrown its original dimensions tenfold, and yet all the great shows in the kingdom were being judged by about the same number of men. Many people advocated trying "amateur" judges. The term is a little vague, for all the famous judges were amateurs of poultry. Most of them had formerly been successful both as breeders and exhibitors, and had retired from the pursuit content with their laurels of old and their experience. What, then, was meant by amateur judges was judges who still amused themselves with breeding and exhibiting. In another point, too, there would be some difference between the two classes of judges. Those who gave the amount of time and trouble to the duty that many of the celebrated judges to whom we have alluded gave, and in some cases still give, very naturally and properly received some honorarium for their services; while judges who are still breeders and exhibitors, and only now and then forego showing to judge, can afford to give their aid gratuitously. To this suggestion there was great opposition from people, who without much practical experience in poultry breeding, had from diligent attendance at shows gained some superficial knowledge, and thought that they might step into the shoes of the great judges and make judging a profitable employment. They were even warning committees of shows that amateurs would inevitably make a mess of judging, lose their heads, and give all the prizes to the worst birds. Managers of shows, in the apprehension of losing entries, were naturally timid about making innovations. At last one or two tried the experiment. If our memory does not deceive us the Committee of the Cirencester Show were about the first to do so. It was soon found that exhibitors to whom it certainly signified most showed their approval by making large entries at shows so judged, and expressed themselves generally pleased with the result. Of course here and there amateurs made mistakes, like other people; but all reasonable exhibitors make allowance for these, and that the fancying public are content with the innovation is clearly proved by the fact that at an ever-increasing number of shows amateurs officiate, and that some fanciers who strenuously opposed the system have come round to it. The first, and obviously one of the best, results is that a really adequate staff of judges are appointed for most shows of importance. Fortunately there has been no kind of rivalry between the old and new judges, but we find their names together in many a schedule; the former must find their labours much lightened by this subdivision of the work, and the latter may learn many a hint from the experience of their seniors.

We have before us the schedule of the Hemel Hempstead Show, at which we see that not less than six judges will adjudicate in the poultry classes alone; two of these gentlemen have long been on the list of judges, three others have only of late officiated, while one well-known and successful breeder will make his *début*, taking some of the local Hertfordshire classes. We also understand that at the shows to be held at the Agricultural Hall in connection with the dairy shows many of the classes will be taken by amateurs specially conversant with them. We always advocated judging by amateurs, and so are extremely glad to see

this result. Of course it entails some practical difficulties which must be looked in the face. The chief of these arises from the fact that almost all breeders sell their superfluous stock, the breeding of birds of high pedigree would otherwise be too expensive a hobby for any but millionaires, consequently when making their awards they may come upon birds which they have bred and sold; this is certainly a difficulty, but one, we think, which sounds more formidable than it really is. Of course an honourable person (and from such alone are judges likely to be selected) will take care, when engaged to officiate as judge, to part with no birds without a stipulation that they shall not be brought before him. Again, if birds really come into close competition for prizes which he recognises as having ever been in his possession he will at once call in the aid of a brother judge.

The task is a hard one, far harder to delicate constitutions than the inexperienced would believe. Constant and strained attention is necessary in class after class for perhaps many hours, while the judge passes backwards and forwards, to the best of his power carrying in his eye the respective forms and merits of close competitors, and all the while tramping many a mile up and down the show hall. We can testify that one amateur, who probably has during the last two years officiated oftener than any others, is almost always thoroughly knocked up by judging, save only when the public are *bond fide* excluded till all awards are made. We say *bond fide*, for somehow or other the clauses in schedules about the exclusion of the public are seldom rigorously carried out. Some committeeman has a friend who must leave the town by an early train, or the reporter of an influential newspaper must be propitiated, or some distant exhibitor has come from far to see the show, has made many entries, and promises more next year if admitted early. For these and divers other reasons a certain number of people generally get in, and of this judges most justly complain. An admirable plan was honestly carried out at the Jersey Show last winter; at a certain hour the show room was locked up with only the Judge in it, and one person to carry his slips as ready to the office; not even the Secretary or Committee entered the room, and we know that the Judge found his labours through some large and super-excellent classes greatly lightened by this easy expedient.

Few things are done to perfection at once. The amateurs who are public spirited enough to officiate as judges may not always in their earlier attempts manage their time well; perhaps at first they find it hard to please themselves, and then horrified at their delay have to hurry on against the grain, but practice overcomes this difficulty. It is best to attempt judging first where competition is not likely to be very severe, and in classes with which the judge is specially conversant. As a rule no man is a really good critic of any breed which he has not kept himself, but when any one with what we have before called a fanciers' instinct has once thoroughly mastered the points of several varieties, he will not find it difficult to become a judge of kinds which he has not himself cultivated. A number of amateurs have been found who are willing to take their turn in foregoing the amusement of showing to judge. We rejoice at this change in the poultry fancy, and augur from it more comfort and self-satisfaction to judges in general, and fewer disappointments to reasonable exhibitors.—C.

### VARIETIES.

THE Shropshire Bee-keepers' Association held its Show at Shrewsbury in connection with the Floral and Horticultural Society, on the 20th and 21st inst., but the same cause that has damped so many enterprises this summer told there with terrible effect, the rain descending most pitilessly during almost the whole time of the Exhibition. The Hon. and Rev. C. Feilding, the Hon. Sec., spared no pains in securing entries and obtaining bees for manipulation in the tent borrowed of the parent association, but the weather prevented an admirable programme from being carried out; Mr. Cheshire as lecturer, and Mr. Abbott as manipulator, scarcely getting one hour each day for operations. While cottagers with skeps in the district find their bees in most cases starving, and often also queenless, it is worthy of remark that Mr. Harding, a local bee-keeper with frame hives, brought some splendid extracted honey, several pounds' worth of which were sold. Mr. Abbott obtained first prize for hive, while a cottager entered the prize list with a good bar-framer of his own making, the basis of which was a lobster box, and the total cost to himself less than 2s.

—THE fourth Exhibition of the Devon and Exeter Bee-keepers' Association was held in connection with the Flower Show. The exhibition of bees and bee appliances was, considering this exceptionally poor season, of a satisfactory character. Numerous exhibitors sent hives and other bee appliances from long distances, some coming from Scotland. During the afternoon short addresses on bees and their mode of living were delivered by Mr. S. Baldwin. Mr. S. Griffin officiated as Secretary of the Show, and Messrs. P. Williams, G. Fox, and S. B. Fox as Judges. Mr. Griffin was awarded the chief prizes for the best harvests of honey in the comb, for the best sample of beeswax, for the best supers of honey, for the best observatory hive, and for



loam and peat, in the proportion of about one part of the former to three of the latter, with a little sand added ; drain the pots well, and supply the plants abundantly with water

during the summer months ; indeed, it will not be too much to place the pots in a saucer of water, emptying occasionally to prevent it becoming offensive.

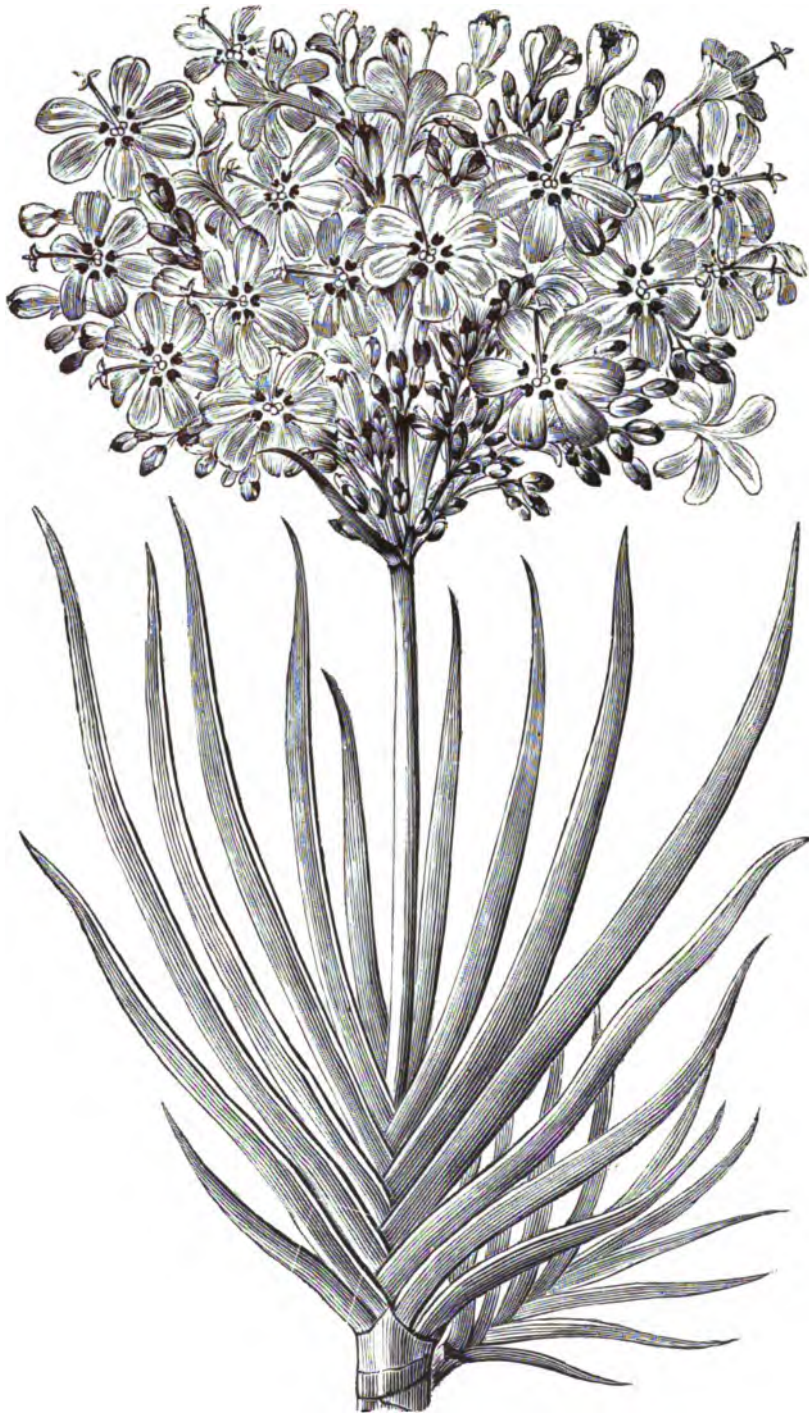


Fig. 22.—WITSENIA CORYMBOSA.

*W. corymbosa* (fig. 22).—This species has much the appearance of a small-leaved Iris, and the leaves are arranged in the same equitant manner ; they are erect, sword-shaped, and very glaucous. Flowers arranged on a large corymbose panicle ;

they have regular six-parted tubular corollas, the lobes flat and spreading, colour rich purplish blue, each lobe having a spot of blackish purple at the base. The plant blooms during May and June in the greatest profusion, but when it



has assumed the proportions of a specimen, flowers may be obtained from it nine months out of the twelve. Cape of Good Hope. 1803.

#### GASTROLOBIUM.

The name of this genus alludes to the inflated seed pod. Amongst the species are many truly beautiful plants. They are characterised chiefly by their two-lipped and five-toothed calyx destitute of bracts, and by the petals of the corolla being of nearly equal length. *Gastrolobiums* mostly form handsome bushes, and will by their beauty amply repay the plant-grower for the attention bestowed upon them. They do not, however, find favour with the antipodean farmer, where they are known by the name of "Poison Plants," cattle dying very quickly after eating their leaves. Pot in peat and loam, more of the former than the latter; make the whole tolerably sandy, and at all times give abundance of air.

*G. villosum*.—This handsome plant has oblong ovate leaves, which are mucronate, cordate at the base, and sinuate at the margins, bright green above, paler below; the whole plant is villous. Flowers produced on terminal racemes, and from the axils of the upper leaves; standard deep red with a yellow spot at the base, wings crimson. It blooms during May and June. Swan River. 1845.

*G. bilobum*.—Leaves slightly bilobed, verticillate, usually four in a whorl, dark green. Flowers arranged in terminal umbels; standard yellow, the wings and keel purple. It blooms during April and May. Swan River. 1803.

*G. pyramidale*.—A fine bold-growing, and when in bloom very showy species. The leaves are verticillate, arranged in threes, broadly ovate, deep green. Racemes axillary on long peduncles, in threes round the stem, and supporting showy flowers, which are deep orange yellow, saving the keel, which is deep red. On fine-grown plants three or four tiers of flowers are produced, rendering the plant when in flower very effective and highly ornamental. It blooms from April to June. Swan River. 1850.

#### OXYLOBIUM.

This is another genus of the Butterfly-flowered Leguminosae, many of which are remarkably handsome. They require considerable attention to grow them into handsome plants, as they are very apt to become lanky and unbranched if neglected. Pot in peat and loam in about equal parts, adding plenty of sharp sand; keep the plants close to the glass, supply abundance of air, and pinch out the points of the shoots during the growing season to induce the production of laterals.

*O. cordifolium*.—A slender dwarf-growing plant with erect hairy branches. Leaves arranged three in a whorl round the stem, cordate ovate, subsessile at the base and hairy at the margin. Flowers produced in terminal umbels from all the branches, colour orange scarlet. It blooms during May, June, and July. New Holland. 1804.

*O. Pultenae*.—This is a very fine species. Leaves usually verticillate, three or four in a whorl; sometimes, through some becoming abortive, they are simply alternate, linear obtuse, with the margins revolute. Flowers produced in large umbels, colour rich orange. It blooms during the spring months. New Holland. 1840.

*O. obtusifolium*.—In this plant we have another extremely ornamental plant for the greenhouse. It is remarkable for its compact habit. Leaves oblong, linear obtuse, smooth and dark green above, clothed with a silky tomentum on the reverse side; margins revolute. Flowers arranged in a terminal corymb; standard rich orange with a spot of yellow at the base, wings and keel rich crimson. It blooms during April and May. King George's Sound. 1825.

#### PLATYLOBIUM.

This genus is characterised by the upper lobes of the calyx uniting and forming a large rounded upper lip. The seed pod is flat, broadly winged on the upper edge, many-seeded. The species here included are all handsome greenhouse plants, well worthy the attention of plant-growers. Pot in fibry peat and loam in about equal parts, with a good portion of sand added.

*P. triangulare* is a charming species. It is a free-branching compact plant. Leaves opposite, acutely triangular, and furnished with a sharp spine at the apex of each angle, deep green on the upper side, paler below. Flowers produced in pairs, axillary, whilst in the bud of a bluish slate colour, when open very brilliant; the standard being rich orange with a central radiating belt of crimson, the wings being rosy crimson. It blooms during June and July. Tasmania. 1805.

*P. formosum* (fig. 23).—This species well deserves its name,

and, like many others of the class to which we would draw attention, would soon become universal favourites if only shown to the horticultural public in good condition. It is a free-branching plant. Stems slightly hairy. Leaves opposite, ovate, ending in a sharp point, dark green above, paler below. Flowers axillary, mostly in pairs, the buds deep crimson; when expanded the back of the whole flower retains this colour, whilst the front side is rich orange yellow, saving a reniform belt of radiating crimson lines near the bottom of the standard. The flowers are produced through the months of June, July, and August. Tasmania. 1790.



Fig. 23.—*Platyllobium formosum*.

*P. Murryanum*.—Leaves acutely triangular, armed with a sharp spine at the apex of the angles, opposite, and dark green. Flowers large and freely produced, on footstalks longer than the leaves; colour clear yellow, with a band of deep red at the base of the standard. It blooms in May and June. Tasmania. 1832.

*P. parviflorum*.—The name of this would lead one to infer it is worthless, but its size is only comparative, for although smaller than those previously named it is still large enough to be very showy. Leaves opposite, ovate lanceolate, smooth and dark green above. Flowers axillary, mostly in threes; colour clear orange yellow, the standard streaked with crimson. It blooms during June and July. New South Wales. 1792.

**EUCALYPTUS GLOBULUS IN KENT.**—Much has been written on the above species of *Eucalyptus*. A healthy young tree about 15 feet high is now growing in the garden of Lady

Herschel, Collingwood, Hawkhurst. It is partly sheltered from north winds by a wall near to it. Mr. Barnes, the gardener, tells me that it has been exposed to the severe weather of last winter, and it certainly looks none the worse for it.—WILLIAM POTTEN, *Caudeen Nursery, Sissinghurst.*

### DUPLICATE ROSES.

I MUST thank "WYLD SAVAGE" for his interesting letter which I have only just seen, having been from home for a fortnight. His opinion as to the likeness of Fisher Holmes to Duke of Wellington I most thoroughly endorse. I cut flowers of both this morning, and they appeared to me to be identical, but on comparing the foliage that of the Duke appeared to my eye lighter and not darker than that of Fisher Holmes. The latter was cut from a maiden Briar, the other from a cut-back Manetti. Is not Marguerite Brassac lighter in colour than Charles Lefebvre? and has not Sultan of Zanzibar more scarlet under the dark painting than Reynolds Hole? But I confess that the latter Rose has not possessed its usual gloss with me this year. I do not think that anyone can doubt the extreme similarity of the three Roses, Exposition de Brie, Maurice Bernardin, and Ferdinand de Lesseps. I have, however, ceased to grow the two former, as I have conceived, rightly or wrongly, that the last is the best of the three. Is not the colour of Marie Finger of a brighter pink than that of Eugénie Verdier? and are not, as a rule, the flowers of the latter larger than those of Marie Finger? This subject is so interesting that I hope others will give their experience. By the way, do any of your readers know a Rose called Naomi? a good grower with quickly ripening and very thorny wood. It is not the old pink Rose of the name, but somewhat after, but distinct from, Abel Carrière.—KENTISH CURATE.

### REVIEW OF BOOK.

*Rambles in Search of Wild Flowers.* By MARGARET PLUES. London: George Bell & Sons.

IN recent years very numerous works have from time to time appeared devoted to the object of extending a knowledge and love of our native plants among the masses of the people, who have not the time or inclination to acquire strictly scientific botanical information. The object is a highly commendable one, for what can increase the pleasures of a trip into the country, especially during the spring and summer, more than an acquaintance with the various and pretty plants that are included in the British Flora? Moreover, the interest excited by some knowledge of the subject leads to greater efforts; thus the acute observation necessary to determine the names of such plants as are met with by collectors which were before unknown to them, becomes an excellent training for the mental powers generally.

The work now before us is one of the class above referred to, and has already been favourably received, for this is the third edition. It treats in a popular and easy manner of the most noteworthy wild plants under the different natural orders in which they are included. A brief review of the structure of plants is given, introducing only such technical terms as are absolutely necessary in describing the various species. The most important properties and uses are fully treated, and many instructive and amusing anecdotes assist in rendering the book of interest to the general reader. We will cite one of these, which appears on page 21 under the natural order Ranunculaceæ, and is a fair example of their character.

"The beautiful scarlet Anemone, the superb ornament of Italian woods, and also of our gardens, is a much valued member of this family. It is told of one of the Mayors of our large towns that when first this flower was introduced into our English gardens he exceedingly coveted some of the seed. This he offered to buy, but the monopolist refused to sell; so his Worship tried *force* to gain his purpose, and proposed to the florist that, as he would not part with his Anemones, the Town Council should come in state to see them. This was esteemed a great honour; and the Mayor managed in his progress to drag the skirt of his velvet robes over the bed of Anemones. The feathery seeds adhered as a matter of course; the blooms of these flowers coming in such long succession and the fruit ripening fast, so that flower and fruit were clustered together; and no sooner did he reach home than with most unlordly haste he picked off the seeds and sowed them. The next year his garden was adorned with the coveted flowers!"

For a work of this description the nomenclature is remarkably accurate, and the subject is fairly well treated throughout. The illustrations are numerous, but the majority are not

of high artistic merit. The authoress, already well known in the literary world, has given us in this book a pleasant record of her rambles, which cannot fail to please the majority of readers.

### CLETHRA ARBOREA.

It may possibly interest your readers to hear that I have a specimen of *Clethra arborea* which has been in the open air for nearly twenty years without any protection whatever but that of the neighbouring trees and shrubs. I measured its height this morning, and find it to be exactly 22 feet 10 inches. It is certainly a magnificent shrub, most luxuriant both in leaf and blossom, and it escaped the last severe winter without losing "a feather."—P. FITZGERALD, *Knight of Kerry.*

### ABOUT LIVERPOOL.—No. 2.

IN noticing in a very brief manner a few of the private gardens about Liverpool it may be well to explain that they are not referred to as being superior to others in the same district. They were visited because they happened to be conveniently accessible, and were not "selected" because of any particular local fame attaching to them. By a different course possibly something of a more striking aspect might have been found, but the general character of the horticulture of the locality would not have been so fairly represented. For instance, Knowsley was not visited, a rainy day intervening, but the admirable practice of Mr. Harrison is readily acknowledged by those gardeners of Liverpool who are competent to judge, and regret was freely expressed that Lord Derby's fine seat could not be reached. A garden of which readers of the Journal will naturally like to hear something is that wherein Mr. Bardney practises, at

#### NORRIS GREEN.

This, the seat of Mrs. Pemberton Heywood, is situated at West Derby, about four miles from Liverpool. Considering that it is so near to the town the estate is of considerable size, and the gardens are tolerably extensive. Trees, and Conifers especially, do not appear to flourish well owing to some adjacent chemical works contaminating the air when the wind is in a certain direction. It is sad to see fine specimens struggling for existence, and not particularly encouraging for a gardener trying to establish others; but young and energetic men will keep trying, and they not unfrequently succeed when more steady-going "old stagers" would make no venture. It is noticeable that the only variety of *Ilex* (Holly) that grows freely at Norris Green is the large and glossy-leaved *Hodginsi*, and the fact is worthy of mention for the benefit of those dwelling in suburban districts, and who require shrubs that will "stand smoke." *Rhododendrons* also do well in the panelled American garden near the large conservatory, and in front of the mansion some grand old clipped specimens of *Evergreen Oaks* arrest attention. On one portion of the extensive lawns deciduous trees abound, almost entirely shading the grass, and the outlook from the windows is cool and refreshing during a hot day. Mr. Gladstone has more than once been at work with his axe on the estate, but he has certainly not materially deprived the lawn of timber.

But the chief feature of Norris Green is the glass. Long ranges are devoted to Peaches and Vines, and other houses to plants; the houses are heated by 8000 feet of 4-inch pipes, and boiler power (two large saddles) is provided for 20,000 feet. The Peach borders have been renewed by Mr. Bardney, and the trees lifted and replanted. Lifting is done almost at any time when the fruit is not swelling if it is necessary to check over-luxuriance. The trees are in admirable condition, thinly trained, with short-jointed wood, dark clean foliage, and superior fruit. Figs are also grown on the back wall of one of these houses.

The Vines are also undergoing the process of renovation, the roots having been raised and placed in new compost; this, with heavy manurial top-dressings, has caused the emission of numerous healthy feeding roots that cover the surface of the borders like a network. Old spurs and rods are also being removed and new growths encouraged. Vines thus managed are certain to produce very useful crops. Some very large houses have been planted with young Vines. In one house the Vines were planted in the spring just when the buds were swelling, those in the adjoining house not being planted until the July following, when they were in full growth. Thus the two systems are fairly seen side by side, the borders being

precisely the same in the two houses. Those planted last, in summer, are by far the best, having produced canes that cannot well be surpassed. They are planted in narrow inside borders, which are increased in width yearly by piling up front linings of turves with a few bones and some charcoal intermixed. Through the edge of the borders thousands of white roots are protruding in quest of more room and food, which will be shortly given. How carefully these precious rootlets would be guarded by some gardeners! to break one of them would almost be a crime. Mr. Bardney values them, but he does not treat them so tenderly. He observes that when the tips shrivel on exposure to the light three or four fresh rootlets issue just within the soil. Turning this fact to account the tips of the protruding roots are shaved off each time a fresh lining of turves is added, and thus the roots are increased, the food in the border is appropriated, and the Vines prosper.

A very large house is devoted to Melons. Some are grown in troughs, some in beds, and others in pots. Half a dozen or more plants are planted at intervals throughout the season, and thus ripe fruit is provided over the longest possible period. Nearly all the leading varieties are grown, and perhaps at some time the grower will tell us of their relative merits.

A large span-roofed stove is full of plants—healthy and clean, and valuable for various decorative purposes; the roof being a magnificent mass of Allamandas, grown as described on page 101. Another fine house is wholly occupied with Roses. The central bed is planted with Teas trained to a trellis in the form of an arch. Thousands of blooms are produced, and the plants are kept free from insects and mildew by a very simple process. A lump of soft soap (2 lbs. or so) is boiled in a saucepan; this is placed in a large pot in the house and mixed with five or six gallons of water. About half a pint of this solution is placed in an ordinary water pan full of water when the house is being syringed, hence the cleanliness of the plants, and the water does not injure or despoil the purest petal. Roses are produced all the year round, and in addition to this fine house of Teas 250 Hybrid Perpetuals are grown in pots. Other houses and pits are devoted to the forcing of Vines in pots, French Beans, and the various flowering plants that are required in such large numbers for the mansion and conservatory. This is a great work at Norris Green, and plants are grown by thousands.

The conservatory is 70 feet long by 40 wide, and has a ridge-and-furrow roof. In the centre are Camellias, handsomely trained pyramidal specimens in superior condition. The border is partitioned into narrow allotments, so that the plants can be the better transplanted at any time—an admirable provision. *Luculia gratissima* planted out thrives well in this house. A stage surrounds the structure, excepting, of course, at the four entrances, and this stage is always gay with plants in pots. Five thousand bulbs are forced, and all other decorative plants are grown in the same proportion. It is a wonder how they are all produced, seeing that about nine-tenths of them must be grown in fruit houses. An additional plant pit is certainly a desideratum. Chrysanthemums are largely grown, those for producing blooms of exhibition quality, but not for exhibition, being in fine condition. Strawberries are forced in great numbers, the plan of layering in fruiting pots being found much better than layering in small pots and then transferring them to larger. The plants are fine for the season, and those for producing ripe fruit at Christmas are now showing their flower trusses. The varieties chiefly grown are Sir Harry and Vicomtesse Héricart de Thury.

The kitchen gardens, of which there are two, are well cropped and managed—indeed, the entire garden affords ample evidence that every department is skilfully conducted. Mr. Bardney, too, has the pleasure of knowing that his labour is appreciated, for Mrs. Heywood cherishes her plants and gardens, and makes her gardener, with all her dependants, comfortable. About a mile from Norris Green is

#### LARKHILL.

This is the residence of Hugh Jones, Esq., and brothers, and the gardens are under the management of Mr. Rogerson. The great feature of interest to the visitor is a grand house of Muscat of Alexandria Grapes, which is worth a long journey to see. The structure is span-roofed, standing east and west. The Vines are planted on both sides and are brought over the entire roof: thus those planted on the north side are trained up the roof on the same side and down the southern roof; those on the opposite side being trained in the same manner—namely, up one roof and down the other. There is no crowd-

ing, the rods being nearly 4 feet apart, and, what is also important, the spurs on the rods are from 18 inches to 2 feet apart. The crop is a grand one. The bunches commence close to the ground; indeed some of the finest of them nearly touch it, and they hang with great regularity all over the house, but, as a rule, those on the south roof are the finer. They are nearly all of handsome tapering shape and range from 3 lbs. to 4 lbs. in weight. The Vines, which are several years old, are planted inside, but the roots have access to outside borders. They were lifted a few years ago, and feeding roots have since been kept near the surface by heavy top-dressings of rich manure and copious applications of water to the inside borders. The outside borders are dressed with good manure annually, but are not covered with fermenting materials.

A fact worthy of notice is the free growth of foliage that is permitted and its disposition. The roof is not unduly crowded with foliage, but growth is encouraged from the base and termination of the rods, this growth trailing on the inside border, which is covered as thickly as an Ivy bank with foliage. The first thought that arises is, Does not this extraordinary growth deprive the bearing laterals and bunches of some support? The crop gives a very emphatic answer in the negative. From the base of one or two Vines growths of great vigour were rambling for 20 or 30 feet on the surface of the border, and yet the wood and fruit of those Vines were as fine, if not finer, than those of other Vines which had not produced such luxuriant basal growth. This growth is encouraged for the purpose of stimulating active root-action, from which the crop benefits. On lifting up the mass of foliage resting on the border the manure surfacing is seen to be completely permeated with white roots, which go far to explain the fine condition of the Vines and crop. This almost wild extension of laterals in positions where they do not crowd the Vines I observed at Norris Green and in some other places "about Liverpool" where Grape-culture is well carried out, and the fact is worthy of mention and of the attention of cultivators in other districts where a different and closer system of stopping the laterals prevails. There are other vineries at Larkhill, and good crops of Grapes in them; but in one house situated in a low position from which an outlet cannot be obtained for superfluous water, even such a good Grape-grower as Mr. Rogerson undoubtedly is cannot produce a satisfactory crop.

The walks in the kitchen garden have cement edgings of the cable pattern, and the quarters contain a profusion of well-managed fruit trees, but the crops are scant and the Apples not much larger than marbles, so late is the season. The wall fruit is in a similar backward state, and cannot be of any material value.

Larkhill is not a "plant place," yet plants are well grown for decorating the conservatory; notably Azaleas, which are large and in fine condition, and several large and healthy specimens of *A. amena* must be very valuable in early spring. Chrysanthemums are also grown, as they are in all gardens in the district; but, as before mentioned, the principal feature of Larkhill is the grand house of Muscat Grapes.—J. W.

#### CARBOLIC ACID AS AN INSECTICIDE.

"G. O. S." has done nearly the same thing in using creosote and water as if he had used carbolic acid, the only difference between creosote and carbolic acid is that one is from wood tar the other from coal gas tar; but creosote is seldom crystallised into a pure crystal salt as carbolic acid is. It is not, however, necessary to use the better class of carbolic acid merely to kill slugs. If used on grass care must be exercised, as a strong solution will kill grass. If to kill slugs on dug ground about an ounce to four gallons is enough. For syringing in a greenhouse, stove, or vinery I use the purer crystallised carbolic acid, but dilute it first in about eight times its weight in water, and do not use much more than from 15 to 20 grains or minims per gallon of pure soft water, but add soft soap. "AMATEUR" speaks of salt. No doubt a winter top-dressing of salt is useful for killing slugs, and also as a manure for the ground; but it should be dug two spits deep before planting time, except for such crops as Peas, Celery, and Broccoli.—C. P. PEACH.

#### THE HAILSTORM RELIEF FUND.

IN reply to "F. R. H. S.'s" inquiry, permit me to state that not a single case has come under my own notice in which sufferers from the recent hailstorm were insured. As a matter

of course, if any sufferer were insured and made application for relief such application would not be entertained. I am more than ever impressed with the urgent need that exists for the establishment of a relief fund, and more especially is it needed on behalf of the many jobbing gardeners who have put up a little glass in which to grow plants for the gardens they keep in order. These men have had a very bad time of it owing to the continuous wet weather; they have not been able to work half their time, and their glass remains broken for lack of means to mend it.—**RICHARD DEAN, Hon. Secretary, Hailstorm Relief Fund, Ranelagh Road, Ealing, W.**

[One of the agents of the Essex County Hailstorm Insurance Company writes in reply to "F. R. H. S." that glass structures can be insured at a charge of 1s. 3d. per hundred square feet.]

### A WELSH ROSE GARDEN.

WALES cannot at present be regarded as standing high as a Rose-growing country, but from the various indications which I have seen lately I am inclined to think something will yet be heard of Welsh-grown Roses.

Rose gardens under the management of keen Rose-growers are springing up in many parts of the Principality; and the one recently formed at Lord Windsor's seat, St. Fagan's Castle, Cardiff, may not only be taken as an illustration of this statement, but also as a type for others to follow who contemplate forming a Rose garden. The one at St. Fagan's is not on a very elaborate scale, but it surpasses in its way anything I have seen. It is simply a piece of ground about 50 yards long by 30 yards wide, surrounded by a wall about 12 feet high. This wall is wired on the fruit-tree-training system, and Tea Roses of all the best varieties are planted at the bottom of the wall and trained up and over the wires. Many of them have been recently planted, others are well established, and all give promise of covering the walls with a profusion of Tea Roses of high quality, besides furnishing an abundance of fine buds and flowers for decorative purposes. All round the enclosure next the wall there is a wide border planted with dwarf and standard Roses to the number of between four and five hundred. The centre is a square of grass which will be laid out in small Rose beds during the coming winter. The varieties grown are those named in the election of Roses in the *Journal of Horticulture*. The health and vigour of all show that much care has been taken in preparing and planting, and the fine blooms which Mr. Crossling has won prizes with at Hereford, Cardiff, and other places prove that the site of the garden is good and the mode of culture adopted successful.—**VISITOR.**

### NOTES ON VILLA AND SUBURBAN GARDENING.

THE time has now arrived for the propagation of all plants required for next summer's display. A cutting is simply a part of a branch with two or more joints. Geraniums are more often taken off longer than this; but with Verbenas, Ageratums, Lobelias, Fuchsias, Petunias, and Heliotropes very small pieces can be inserted thickly together. Cut the base of the cutting clean across with a sharp knife, removing the lower leaves; and in the case of Geranium cuttings it is a very good plan to allow them to remain for a few hours exposed, so that the wounds may have some chance of drying before insertion in the soil. Six-inch pots are very convenient for cuttings, as they can be conveniently placed upon narrow shelves near the glass, and the plants are not so liable to damp-off as in larger pots or boxes. Place about half a dozen Geranium cuttings in each pot, and about a dozen or more of other softwooded plants. The present is also a good time to study arrangements for another year. Pick off dead flowers, and keep the beds neat and trim to make amends for the somewhat meagre growth and scarcity of flowers—the effects of the wet season.

**VINES.**—Plants that are carrying ripe fruit will be benefited by the assistance of fire heat to dry up the condensed moisture, which is very apt to cause berries in the centre of bunches to become mouldy and decay. Go over the bunches frequently, and remove with a pair of Grape scissors any mouldy and shanked berries. A little fire heat will also help to ripen the wood; air must be given freely, and laterals should be closely pinched. We fear that in the neighbourhood of London many Peaches and Pears will not ripen this season; and we must impress on all to clear away superfluous growths to admit as much light and sunshine as possible, for well-matured wood is the key to successful fruit culture.

**CUCUMBERS AND MELONS.**—Where these are grown by the aid of dung frames a good lining of brisk hot manure placed round the bed will greatly assist the plants during the cool nights we

may now again expect, and it would be well to cover the lights every evening with mats; and a more even temperature will be maintained in the frame. If the plants are crowded thin and regulate the branches, and water Cucumbers on bright afternoons as they become dry. Melons will require little or no water after this, and the fruits should be placed on pieces of slate, tiles, or wood to preserve them from decay.

**KITCHEN GARDEN.**—Pea haulm, Broad Beans, Lettuces run to seed, or any plants of a similar description that have ceased to become useful should be instantly removed and the vacant ground planted with Curled and Cottagers' Kale, so that there may be no deficiency of vegetables during the long winter months. Thin Turnips as they become large, and if there is any fear of the supply running short make another sowing; the tops will be useful in the spring. Onions sown early are now ready for lifting, and should be well dried before being stored away. A dry airy room is the best place to hang them in. Cold weather does not harm them, whereas warmth and moisture cause them to grow. Lift late crops of Potatoes, and plant Cabbages. Small varieties such as the Cocoa Nut, Wheeler's Imperial, or Carter's Heartwell Marrow, may be planted from 9 inches to a foot apart every way; but larger varieties, such as Enfield Market, require a space of 2 feet between the rows, unless it is intended to take out every other plant in the spring.

**CHRYSANTHEMUMS.**—Most of these plants will now have filled their pots with roots, and may be beneficially watered with liquid manure. It is not wise to apply it very strong, especially at first, and to give liquid manure at any time so that it leaves a deposit on the top of the soil is more injurious than otherwise. Keep the shoots well tied out and make them secure, or the wind may snap them off. Plants intended to produce large flowers should now be disbudded—that is, if the growing points of almost every variety are examined a small flower bud will be observed growing in the centre of three or four young shoots; if these young shoots are carefully removed this minute flower bud will continue to advance in size and make a large first-rate flower. The care the buds and plants now receive makes all the difference between the production of first-class and inferior blooms.

### WORK FOR THE WEEK.

#### KITCHEN GARDEN.

**CABBAGES** form the most important spring crop, they should therefore receive prompt attention. Plants from the July sowing will now be sufficiently large to be planted out. Do not allow them to stand long in the seed beds, as they become weak and leggy. We usually plant after a crop of Onions, the ground being turned over and properly prepared by the addition of well-decayed manure; 18 inches apart every way will be sufficient space for the early sorts. Slugs and grubs should be kept in check by dusting the plants over, when damp, with wood ashes and an admixture of soot. Plants from the August sowing must be pricked off as they become large enough to handle. It is important they be kept sturdy, which will enable them to endure the winter more safely. Make another sowing of Cauliflower seed, and sow Lettuce seed of the hardy varieties. The crop of winter Spinach should be thinned before the plants become too large; allow sufficient space to prevent damping off during bad weather, and keep the surface soil between the rows well stirred. Thin out autumn-sown Onions to about 8 inches apart, every alternate one being afterwards removed for early spring use as required. The spring-sown Onions are very late; they should be pulled as soon as mature, exposing them in the sun for a few days before storing away. As ground becomes vacant plant it with Rosette Colewort, Lettuce, Endive, and late Celery. Radish seed should now be sown in sheltered situations. Tomatoes should have the leaves removed from over the clusters of fruit, in order to advance the ripening process.

#### HARDY FRUIT GARDEN.

There is yet time to plant Strawberries; select well-rooted runners, giving preference to those that have been layered and well-established in 3-inch pots. The Strawberry requires a deep rich soil and an open situation, for the roots penetrate the soil to a considerable depth when the ground is deeply trenched and well manured, and this enables the plants to withstand the effects of dry hot weather. Old plantations should have the runners removed; keep the soil lightly stirred between the rows. When the Raspberry season is over the old bearing wood should be cut out at once, and the young canes thinned out, retaining from four to six of the strongest. It will be advisable to secure them loosely to the stakes or trellis until the growth is completed and the wood well ripened. Net up a sufficient number of bushes of Red Warrington or other late varieties of Gooseberry, also Red and White Currants, with Morello Cherry trees; these, owing to the lateness and scarcity of other fruits, will be very acceptable. Apricots are only now ripening, and there is not any sign of ripe Peaches, except the very early varieties. Plums are very late, and unless the late summer and autumn be unusually fine the fruit will not ripen. The summer Pears and Apples are a month late. They should be gathered as they ripen. Birds, especially the blue



timouse, have a great relish for the softer-fleshed varieties. Intimidation is of no use, as they soon learn the difference between blank and shotted cartridge; the latter is the sure remedy. Wall trees will require to be looked over frequently for the stopping or removal of useless shoots, and bush and espalier trees require similar attention. Secure the extensions to the wall or trellis, as they are liable to be broken by the wind.

#### FRUIT HOUSES.

**Cucumbers.**—Make a sowing of seed to obtain good bearing plants about Christmas. There is no better variety for fruiting all through the year than a true stock of Telegraph. Paragon appears to be a very useful free-bearing variety. Push forward the work of clearing out the house intended for their reception, attend to any repairs that may be necessary, paint or thoroughly cleanse the woodwork with soap and water, limewash the walls, adding a little flowers of sulphur, and clear out the old soil and spent manure. If fermenting materials are employed for bottom heat they must be now prepared; stable litter and Oak or Beech leaves in about equal proportions thrown together, moistened and turned over two or three times, answer very well. Tan is a good material, as it retains heat a considerable time. Assist the autumn-fruited plants to make strong growth, remove all the staminate flowers and tendrils as they appear, being careful neither to overcrop nor overcrowd the plants. Less moisture will now be necessary unless the weather is very bright, but lightly syringe the plants at closing time or about 3 P.M., and sprinkle the walls at 7 or 8 A.M. In pits and frames linings will be necessary to maintain the plants in a free-bearing state; keep the foliage rather thin, and stop the growths one joint beyond the fruit. Sprinkling overhead should be discontinued, except on sunny afternoons. Admit air early in the day, and close early in the afternoon.

**Melons.**—The quality of Melons has been very variable this season, and those from frames have been few and poor. The plants in frames with fruit ripening should have very little water, and if linings be employed air can be given more freely, which will assist the fruit in ripening and improve its quality. Late plants with the fruit swelling off should only have moderate supplies of water, and on bright afternoons sprinkle overhead and close early; admit air early and maintain a temperature through the day of from 80° to 85°, and if the lights are covered with mats at night the temperature will be less influenced by the external air.

#### PLANT HOUSES.

**Greenhouse.**—If a few seeds of *Schizanthus* are now sown good plants will be obtained for conservatory decoration; they afford a profusion of flowers and are very attractive. *Hydrangea* cuttings should now be obtained from plants that have their buds well formed; take the cuttings with three or four joints, and insert singly in 3-inch pots filled with turfy loam and sand. Place the cuttings in gentle heat, and when rooted remove them to a cool house. These make very compact plants, producing fine heads of bloom. H. Thomas Hogg has fine heads, the flowers are much larger than *H. hortensis*, and white. It is a fine variety and free flowering. Encourage *Mignonette* by keeping the plants near the glass, so as to impart all the strength possible, and pot them on as they require it. A few good plants will produce more and finer spikes than a number of weakly plants. Standards are very useful during the winter months, especially if trained to umbrella-shaped trellises. The plants must be kept free from green aphides which are sometimes troublesome, and if allowed to remain soon injure the appearance of the plants. If a quantity of bloom be required for cutting it will be better afforded by plants in pits. Plants from seed sown early in August are the most suitable for this purpose. The pit must be heated to maintain a temperature of 45° to 50°. Tree Carnations for forcing must have every attention in keeping them free from aphides, and afford all the light possible so as to render them dwarf and stout. *Solanum* has been planted out should now be lifted and potted in 6 or 7-inch pots, then place them under a north wall, as if allowed to flag they will lose their lower leaves. *Epiphyllums* are useful winter-flowering plants, and are generally grown as dwarf standards on the *Pereskia* stock. They will now have completed the growth, and should receive no more water than is necessary to maintain the growth fresh. They require a warm greenhouse temperature. Although grafted plants are usually grown, *Epiphyllums* succeed on their own roots. Cuttings strike freely in sand if kept close until rooted, then pot them singly in fibrous loam. These dwarf small plants are useful when in bloom for a variety of purposes. Few plants make a finer display in spring and early summer than *Clematises* grown in pots and trained to trellises. Such as have been grown and flowered through the summer should be placed on a bed of ashes, where they will receive all the sun and light possible so as to mature the growth, and in case of heavy rains lay the plants on their sides. Roses in pots should be placed where they will be benefited by the sun's heat and plenty of air. If there is any trace of insects apply an insecticide, or for mildew flowers of sulphur. Pot a good batch of Roman *Hyacinths*, employing turfy loam with a fourth of well-decayed manure and a sixth of sand, pressing the soil firmly around the bulbs and keep the crowns clear. Place the pots on a bed of ashes in a

frame, covering them about 6 inches deep with ashes, and the soil being moist no water will be needed until the bulbs have produced roots. When well rooted remove the plants to a shelf near the glass in a house where a gentle heat is maintained, and they will flower strongly by November or early December. Another batch may be allowed to come on gradually in a cool house, and will flower at Christmas. A batch of the Paper White and Double Roman *Narcissus* should be potted without delay, and if treated similarly to the Roman *Hyacinths* will flower at the same period. *Guernsey* and *Belladonna* Lilies make a fine display in late summer or early autumn, and should be obtained and potted without delay. After flowering they should be kept near to the glass and well supplied with water, so as to enable them to make and complete a good growth. Place the plants outdoors after May in the full sun, and do not allow them to become very dry, not even when at rest. We keep our bulbs in the greenhouse constantly on shelves except when flowering, treating them similarly to *Vallotas*. The last mentioned are now throwing up their scapes freely and must be well supplied with water. They are the finest late summer ornaments of the greenhouse.

*Cineraria* seedlings or offsets for late bloom should be potted off singly, placed in a cold frame, and kept moist and shaded until established. Plants in small pots should be shifted into a larger size before they become rootbound. Those for autumn flowering should be kept cool, supplying them with liquid manure, and exposing them more fully to the sun to harden the growth. *Primulas* well advanced for flowering should have liquid manure occasionally, and shade only in the hottest part of the day for an hour or two. Plants for later flowering should be shifted into larger pots as they fill the pots with roots. *Calceolarias* must not be allowed to draw up weakly in the seed pans, but be pricked off as soon as they can be handled, keeping them cool and moist. Seed may yet be sown, but the earlier the better. Violet plants from runners or suckers put-in in April or early May will be showing bloom, and if required for pots or planting in frames the earlier it is done the better will be the autumn and early winter bloom, as the plants recover the check of removal before the blooms are too far advanced. For frames a sheltered sunny situation should be selected, and if the ground is not well drained put in 6 inches of rubble, and plant in 6 to 9 inches depth of turfy loam with a third of leaf soil, watering well after planting, and leave off the lights until the weather becomes wet and cold, when they may be employed to throw off heavy rain and secure a genial well-ventilated atmosphere. In potting employ loam with well decayed manure or leaf soil one-third, as there is no fear of the plants producing too much foliage providing they have had plenty of room to make a good growth. Place the pots on ashes at the back of a wall out of the sun for a few days, and then in a cold frame, removing them to the greenhouse as required.

#### TRADE CATALOGUES RECEIVED.

Charles Turner, Slough.—*Catalogue of Bulbs*.  
John Laing & Co.—*Catalogues of Bulbs and Roses*.  
W. G. Webb & Son, Stourbridge.—*Illustrated Catalogue of Bulbs*.  
W. Hean Quick & Co., Barnstaple.—*Catalogue of Bulbs*.  
P. Sebire, Ussy, near Falaize, France.—*Catalogue of Shrubs and Trees*.

#### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense. Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

CORRESPONDENCE.—Dr. Hogg is at present in the south of France, and all communications addressed to him personally will have to remain at this office till his return.

SEEDLING PELARGONIUM (*Mrs. W. S. P.*).—The variety resembles *Master Christine*, and is no doubt a seedling from it; and if it is of dwarf habit, and at the same time retains its petals well, it will be useful both for pot culture and bedding purposes. The truss is very fine, and the colour a cheerful rosy pink.

CUTTING DOWN ZONAL PELARGONIUMS (*North London*).—Your plants, which have been "flowering all the season in the greenhouse and have become tall and leggy," should be cut down to where the wood is hard and brown at the base of the stems. If the plants can be placed in a frame where the lights can be drawn over them during heavy rains they will be better there than outdoors, but they will be better outdoors during September than in the greenhouse. In a short time the plants will make fresh growth, and when this is about an inch in length all the soil should be shaken from the roots, the plants being potted firmly in much smaller, clean, and well drained pots; and if kept in a frame for a time and then afforded a light position in the greenhouse will make dwarf bushy plants for next year's flowering, and a considerable number of them can be wintered in a



comparatively small space. The shoots severed from the plants may be made into cuttings, inserting one in the centre of a 3-inch pot, or three or more in pots of a larger size, as may be most convenient. They will strike readily in a cold frame, or in the open air if sheltered from heavy rains.

**TEA ROSES AT CHRISTMAS (Lady B.).**—They can be had if you have light and sufficiently heated structure for growing the plants in. The principal Rose nurserymen grow Tea Roses under glass, producing strong plants with well matured wood by September. Order the varieties you require, stating the purpose for which the plants are needed. These plants, which will require little or no pruning if placed in the house towards the end of October and syringed according to weather, starting them with a minimum night temperature of 50°, and gradually increasing the heat as growth advances, will flower at the time required, and with generous treatment will continue flowering for a considerable period.

**EMIGRATION (Angleterre).**—A young man should be prepared to do other kinds of work than that to which he has been accustomed in gentlemen's gardens in England before he emigrates to the colony you name, unless he can obtain the aid of any influential colonist in procuring a situation.

**ROSES NOT FLOWERING (J. P.).**—It is a shy-flowering variety and requires a drier locality than yours to mature its growth. Probably if you plant it in a dry and warm position near a south wall, and thin out the shoots in summer and prune very slightly in winter, you may succeed in obtaining some flowers.

**ROSES UNHEALTHY (Munster).**—Your Rose trees appear to be seriously attacked with the black fungus, which is not easily eradicated. We have often checked the spread of the parasite by dissolving 2 or 3 ozs. of soft soap in a gallon of water, and with this syringing the trees, and further dusting the foliage when wet with sulphur. It is very desirable also to enrich the soil with manure, applying also copious applications of liquid manure to the roots to stimulate robust growth. If any of our Rose-growing correspondents can name a more effectual cure for the fungus we shall be glad to publish it.

**CLIMBING ROSES FOR GREENHOUSE (J. H. S.).**—In your previous letter you employed the term, "planted out on or under the stage," which did not imply planting in boxes. Place the boxes on the stage, drain them well, and plant the roses in turfy loam with a third of decayed manure and a little soot, say about a pint or nearly so to a peck of the compost, and half a pint of bone dust, pressing the soil rather firmly in the boxes and about the roots. Besides Marechal Niel which you have, Gloire de Dijon, Belle Lyonnaise, Cheshunt Hybrid, Climbing Devonensis, Celine Forestier, Niphetos, and Marie Van Houtte will be suitable for training up the rafters. They will require careful attention as to watering to establish them and keep them in good health. It does not matter whether they are on the Manetti or seedling Briar, we have them equally good on both stocks. If the soil is very heavy we prefer the Briar; if light, the Manetti.

**CISSUS DISCOLOR NOT COLOURING (A Blacksmith).**—The foliage colours best when the plant is grown in a rather shaded position. If it is grown in such a position in a warm moist stove, and the roots are kept in an active state, the leaves seldom fail being richly marked. A humid atmosphere is preferable to syringing. Your specimen is perhaps grown in a house that is too cool and dry, or you have permitted the plant to become dry at the roots at some time. Few plants are more easy to cultivate than this, but it never colours well in a dry atmosphere.

**CLEMATIS PRINCE OF WALES (J. O. N.).**—You may safely plant this variety as you have been advised; it grows as freely and flowers as profusely as C. Jackmani, and is equally rich in colour; it is indeed one of the best varieties for beds and pillars.

**ONIONS FOR AUTUMN SOWING (A Youngster).**—The white Tripoli is a reliable variety, but if you require a smaller Onion and one which forms its bulbs early sow the Queen. Mr. Allis, whom we know to be a good cultivator and careful observer, states that the old Silver-skinned Onion that is usually grown for pickling is valuable when sown in the autumn. We have not grown it in the manner indicated, but it is worthy of trial. Sow the seed as speedily as possible.

**CLAY FOR ROSES (J. B.).**—The clay should be chopped up as finely as possible before it is spread on the ground with the manure, as if in large lumps the action of frost would not reduce them to the extent you imagine. It cannot be chopped too small nor mixed with the soil too thoroughly when the ground is dug in the spring. The specimen sent is a peculiar instance of tetralogy or the metamorphosis of the floral organs. There appears to have been a partial cessation or check in the growth resulting in the production of perfect sepals and petals, but previous to the development of stamens and pistil a vigorous additional growth was made, the axis being prolonged and bearing ordinary leaves and flower buds. It is occasionally seen, but is by no means common.

**CAMELLIAS GROWING TOO VIGOROUSLY (G. S.).**—The Camellia having very tender roots is impatient of being disturbed, and should therefore be very carefully treated. Lifting should be done as soon as the growth is completed and the wood a little firm, or it may be deferred until spring just before the plants start into growth. Spring is preferable when the plants are large and require cutting-in so as to preserve their symmetry. The extraordinary growth is probably owing to the season being so moist.

**FRUIT TREES FOR SOUTH-WEST ASPECT (Idem).**—Peaches and Nectarines would succeed, but the trees would require protection in spring. Hale's Early, Dr. Hogg, Royal George, Noblesse, and Barrington Peaches, with Lord Napier Nectarine, would be suitable; or Plum would answer, as Green Gage, Jefferson, Kirke's, Transparent Gage, and Coe's Golden Drop. The south-east aspect would suit Apricots—Moorpark is the best; or it would suit Plums. Tea Roses would succeed in this aspect, and we prefer them to every other kind of climber for affording cut flowers; the wall would not accommodate more than three Apricot trees, and as many, or at most four Roses—that is, one between each tree and at the ends of the wall.

**ROSES IN VINERY (B.).**—Tea Roses would not succeed in a vinery beneath the Vines, as they require abundance of light. It is immaterial whether a Marechal Niel Rose trained to the roof of a glass structure be planted inside or outside the house, only in case of the latter the stem must be protected in winter by a hayband or other material.

**HEATING VINERIES (W. G. C. C.).**—The brick flue you propose would need stone slabs for the top, and as it ought to be 3 inches wider than you name and a brick higher it would probably prove more costly than you imagine. The cheapest flue you can construct would be of strong 10-inch

well-burnt glazed pipes such as are used for draining, but they must be connected with the furnace by a brick flue about 8 feet long, and even then the pipes may crack at some time or other. We have known drain pipes to answer admirably, and we have also seen them crack seriously, causing much inconvenience. For heating vineries such as yours we should have a saddle boiler and two rows of 4-inch pipes. This would be by far the most satisfactory mode, and in the end would not be more costly than the flue. The furnaces you name will be sufficient if you adopt the flue, and you had better consult a practical builder about making provision for cleaning it whether it be formed of bricks or drain pipes.

**SEMI-DOUBLE LAPAGERIA (Subscriber).**—We should save seed from the flowers having twelve petals, and should also layer the shoot producing them. It is not certain that you will succeed in raising plants that will produce flowers of the kind you name, but the experiment is well worth trying. We know that flowers of Stocks and Wallflowers which have more than the ordinary number of petals produce a greater percentage of doubles than do the normal single flowers of four petals.

**PRUNING CLIMBERS (F. Byron).**—If the Rose has not covered the space required secure the long shoots to the wall their entire length, but do not crowd them. If the growths are not wanted for covering the wall cut them off now to within about 6 inches of the main stems from which they issue. The Vine and Wistaria may be treated precisely the same. Russian mats or frigi domo placed over the Magnolia will preserve it unless the frost is unusually severe, and in that case the addition of a little dry hay or fern may be advisable.

**SCENTLESS ROSES (Dublin).**—Some of our Rose-growing correspondents have obliged us with the following list of roses that have little or no perfume; but one of them observes that nearly all Roses have more or less of scent, it being only a question of degree and the sensitiveness of the organ detecting it, with the influence of soil and climate:—*Hybrid Perpetuals*: Annie Blanche, Annie Laxton, Antoine Mouton, Auguste Mic, Baronne de Rothschild, Baronne de Maynard, Belle Normandie, Bernard Verlot, Capitaine Christy, Charles Verdier, Clothilde Rolland, Comtesse de Serenye, Comtesse d'Oxford, Duchesse d'Orleans, Edouard Morren, Elie Morel, Emilie Haussburg, Etienne Levet, Hippolyte Jamain, Hortense Mignard, John Hopper, Kleber, Madame Charles Verdier, Madame Hunnebel, Madame Laclaire, Elise Levet, Madame Nachury, Marie Finger, Madame Prosper Langier, Miss Poole, Madame Vidot, Mdle. Eugénie Verdier, Marguerite de St. Amant, Marquise de Castellane, Miss Hassard, Monsieur Nomman, Mrs. Veitch, Mrs. Baker, Oxonian, Paul Neyron, Princess Beatrice, Princess Mary of Cambridge, Reine du Midi, Reynolds Hole, Souvenir de General Douai, Star of Waltham, Sultan of Zanzibar, Victor Verdier, Villaret de Joyeuse, and William Griffiths. Of Bourbon Roses Catherine Guillot, Sir Joseph Paxton, Baronne Gonnella, Armosa, Acidalia, and Reine Victoria are devoid of perfume. *China Roses*: Cramoie Superieure, Ducher, and Mrs. Bosanquet. Nearly all the Tea and Noisette Roses are strongly scented, but the above list contains a very great variety, and amongst them many of the very best exhibition Roses.

**SHAMROCK (A Young Gardener).**—There is some doubt as to whether the name Shamrock was originally applied to the Oxalis Acetosella or the Trifolium repens, but there is more evidence in favour of the latter. Rhubarb is certainly not a fruit, as the edible portion is the succulent petioles of the leaves. It is more properly regarded as a vegetable, and therefore included in the classes for vegetables at exhibitions.

**NAMES OF PLANTS (James Shearer).**—1, *Apium graveolens* (Smallage or Wild Celery); 2, *Charophyllum sylvestre* (Cow Parsley); 3, Undeterminable (Bog or Lancashire Asphodel), so named we presume from its frequent occurrence in Lancashire, but it is fast disappearing owing to the rapid cultivation of the bogs, particularly in the lowlands—Clint Moss for instance, while on Clifton Moss it has altogether disappeared. (*R. P. O.*)—We think it is *Tritonia aurea*, but the flowers were so withered as to be almost unrecognisable. Flowers should not be posted on Saturdays, as they are almost certain to be withered before they can be examined on Monday. (*Rumtho*).—The spray arrived in a withered state, and was also crushed in transit. We placed it in water, but instead of recovering its freshness it decayed, and we are unable to identify it. It resembles a *Marcgravia*. (*Sid*).—As none of the plants sent were numbered, and not even separated in any way from each other, it is obviously impossible for anyone to give their names; but we do not undertake to name plants without flowers, nor Ferns without spores. (*Mrs. H.*)—The specimen is the true species (*Liriodendron tulipifera*), and not a variety. (*G. Murray*).—The succulent plant is *Fedum spectabile*. The other is the Rose Campon, *Lychnis (Agrostemma) coronaria*. (*W. S.*)—1, Specimen too withered; 2, *Linaris vulgaris*. (*V. G.*)—1, *Adiantum Capillus-Veneris*; 2, *A. assimile*; 3, *Phymatodes Billardieri*; 4, *Pteris serrulata*; 5, *Nephrodium molle*; 6, *Lastrea tenericaulon*. (*Constant Reader*).—The specimen numbered 22 is *Aucuba japonica*, but the others were all insufficient for accurate identification; 21 is a variety of the common Ash, probably *parvifolia*; 23 resembles *Spirea bella*; 24, Possibly the shoot of a *Philadelphus*; 25, *Pinus excelsa*; 26 appears to be *Salix argentea*. (*Prod-sham*).—The plant sent is *Spergularia arvensis*, Corn Spurrey, which is often very troublesome on sandy soils. Summer working of the land or laying it down with permanent grass seeds for a meadow would be the best mode of eradication. (*J. M.*)—*Spartanum africana*. (*F. C.*)—*Tilia alba*. (*A. Laumer*).—It is a Pavia, probably *P. californica*.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### THE ADVANTAGES OF DEEP CULTIVATION.

(Continued from page 180.)

It by no means follows that in deep cultivation the subsoil should be brought to the surface, but in most cases quite the reverse, because it is well known that all subsoils except peat contain more or less seeds of weeds, which may have lain dormant

for generations. More particularly is this the case upon strong clays and light chalk or sandy land, for the former is very apt to crack open in a dry hot summer and leave for a time wide and deep fissures in the land, and it is supposed that the seeds of docks, thistles, and other weeds when dropped have fallen into these openings in the soil, and been there retained until liberated and exposed by deeper cultivation. Again with respect to chalk or sandy soils, certain weeds are indigenous to them, such as charlock, red weed, and wild parsnip; and although weeds may become scarce on the surface soil after a course of careful and good farming, yet as soon as the plough is let down somewhat deeper than usual, a number of these weeds will be sure to appear and cause heavy expenses in hoeing, weeding, &c. There is, however, an admirable implement which has been in use for some years but lately improved, called the "weed eradicator." This is drawn by one horse, and covers a space 9 or 10 feet in width, and pulls the weeds without injury to the corn, and as the machine revolves leaves the weeds behind to die. This is of immense importance where the land is infested with charlock, poppy, &c., especially in a rainy summer such as we have experienced this year. Hand-pulling used to be formerly practised, but labour is now scarce and dear, hence the advantage of machinery.

Having previously stated that the best time for deep ploughing and deep cultivating is in the autumn or early winter, and having also given the reasons for so doing, we would recommend the home farmer not to attempt it at other times of the year, particularly when it is intended as a preparation for cereal crops, because the land would be found too hollow. Our practice tells us that all cereal crops require a firm bed to root in, although it might have been moved deeply with benefit the previous year as a preparation for the root crops. When the quantity of arable land upon the home farm does not exceed from seventy to one hundred acres, the horse power of the farm may be equal to the work of deep tillage by the use of the ordinary plough and the subsoil plough, because it must be remembered if the deep tillage is done only once in four years, and this is certainly frequent enough, it does not require any great additional horse power to effect it. There is, however, upon some soils rocky substances of considerable size that have been found embedded in the soil just beneath the ordinary depth of ploughing, and this is not only a disturbance in the work of ploughing, but it is a source of great difficulty in subsoiling, not only when effected by horse labour, but in doing it by steam power when the rocks are large. Upon this hilly land the surface soil is constantly wearing away, being washed by rains into the valleys, so that when we have been ploughing such land we have been obliged to employ a man to follow the plough with a pickaxe to take up such rocks or boulders as the plough may touch in passing, for they not only impede the proper tillage of the land, but the corn dies off in patches where the rocks exist in the subsoil. On farms even of one hundred acres or less it will certainly be advisable to employ steam power for deep tillage when it can be had upon hire by paying so much per acre for the work; it then becomes a question of the best way of employing steam power for deepening the tillage, for it will not do to plough the full depth required to be moved and turn the raw subsoil up on the surface. We therefore recommend that the common plough should first turn a furrow about 5 inches in depth before proceeding to use steam power, because the subsoiling coulters of the steam cultivator may then be used at almost any depth with efficiency, and the subsoil may be broken with greater ease and facility in consequence of the surface soil having been recently moved. When the home farm consists of several hundreds of acres steam power should always be available for cultivation of all kinds, whether shallow scarifying, ploughing, pressing, or deep cultivation may be required, for on all large farms steam must be considered as the chief motive power for the ordinary work of the farm.

We will now refer to the question of soils, and taking first land resting on chalk. Where the top soil is strong or loamy this may

be cultivated deeply with great advantage. On land where the chalk crops out on the surface we have noticed that great injury has frequently been done either by deep ploughing or cultivating, because these soils where the chalk is nearly always hard and is called rubble, after being deeply moved will not settle down firm again, and for years will remain comparatively sterile. We believe that such soils produce better by using the scarifier only instead of the plough, except when the land is to be ploughed out of lea. Sandy land when it consists also of a sand subsoil, unless it contains large boulders of a sandstone, will not pay for deeper cultivation than usual. The same may be said of the sandy loams except in some instances where the subsoil is strong and retentive, it will then answer for deep tillage by subsoiling. Stonebrash, marl, and limestone soils, including also the greensand formation, the latter being often found at the base of the chalk hills, will all pay for deep tillage, and deep ploughing also, because these soils contain phosphate of lime. In bringing fresh soil to the surface the mineral properties of the land are brought into action by atmospheric influence and liberated for the benefit of crops both of cereals, pulse, roots, &c. Peat, moss, or fen land where the peat lies shallow with a stronger subsoil will often pay for deep tillage; even deep ploughing in such a case will be of advantage, for the more of the stronger subsoil that can be brought to the surface the better, because it will impart substance and solidity to the peat, and enable it to furnish food for plants. Pure peaty land consists merely of decayed vegetable substances, and is so loose and hollow in the natural state as to be almost or quite barren; whereas when ordinary earthy substances are mixed with it, it becomes firm and the vegetable humus is constantly decaying and furnishes plant food in abundance.

Although we have introduced to notice some of the different soils to illustrate how they may be affected by deep cultivation the home farmer we consider should always experimentalise upon part of a field first, in order that it may be ascertained before making a heavy outlay what will be the effect of deep tillage. To exhibit the propriety of so doing we have an instance upon our own land, a portion of three fields being of a very productive nature, and never manured for a period of sixty years, but always gave full crops under a judicious rotation of cropping. This land is a strong loam upon clay throughout the fields, but in the most productive part we had the subsoil analysed, and the result proved that it contained a large amount of potash. Now this land paid well for deep cultivation, because it liberated and brought the potash into action. In the other parts of the fields the land both at top and subsoil was to all appearance the same, whereas, it being deficient in potash, the subsoil would pay well for moving by the deep cultivator, but not for ploughing and raising the clay to the surface. Deep cultivation as a rule may now be done upon lands of any extent, but the higher price of manual labour, the much higher price of horses, and the increased difficulty of insuring that the horses are well cared for by the teamsmen, all point in one direction, and lead to the idea that we must not make a man do what a horse can do, and that a horse should not be made to do what a steam engine can do. There is much to be done in many districts to facilitate culture by steam by the removal of fences, hedgerows, &c., and upon farms of some considerable extent before trying the engines and cultivating tackle a calculation should be made how many horses can be dispensed with. A friend of ours occupying a large hill farm of chalk soil says, "Before I purchased steam tackle I was not master of my work with less than thirty-two cart horses," but now he considered he was in a better position with Fowler's engines, &c., and twenty horses. The use of steam power suggests some very important ideas, for when we consider that in discarding so many horses, and that the value of the food which each horse required would fatten three bullocks in the year, it becomes a question of the highest consequence to the home farmer as well as the public. The animal power is maintained by the consumption of agricultural produce, whereas the power of steam and all its requirements are derived from the elements of earth, fire, and water—that is to say, metal and coals from the mine, and water from the clouds and springs. Thus steam gives us her power without trenching upon the food of man or animals; but for the home farmer to make proper use of steam power in many districts good roads and ponds for retaining water must be available for constant use.

#### WORK ON THE HOME FARM.

*Horse Labour.*—As the corn harvest is so late it will not now be advisable to sow turnip seed after the corn is cut if good roots are required; but either turnip seed or rape seed, or both in conjunction, may still be sown if spring food only is required. When the turnips and rape run up with greens they furnish abundance of green fodder either to fold off with sheep or to cut up for soiling dairy cows, young stock, or even fattening bullocks if they have also a good allowance of cracked beans, maize, and cake. The home farmer must now turn his attention to drawing out yard and box manure on to the leas where intended for ploughing and pressing and sowing with wheat; and it must be

remembered in a late season like the present that time may be gained by using steam power for ploughing and pressing lea ground, as this work is now done with neatness and good effect either by hired tackle or the steam power used as the cultivating power of the farm. Sowing trifolium must be done early in a season like the present, and we recommend that 80 lbs. of seed per acre may be sown with advantage, in order if possible to save a crop in spite of the slugs, which this year prevail to a most unusual extent. Winter vetches and rye may also be sown as soon as the land can be prepared to receive the seed. The most important matter to be considered now and before wheat-sowing is commenced is that in case the weather should prove dry in September and early part of October the land after corn, &c., should be autumn-cultivated, at least all the land intended for mangolds and Swedes next year. As soon as the land is scarified and the couch and weeds carted away the land may be fallow-ploughed a good depth in the early part of the winter after the wheat-sowing is completed. This autumn tillage, according to our practice, we always continue until the rains commence, at which time cleaning the stubbles must cease; but the wheat land will then be in good order for ploughing, pressing and sowing.

In the early districts wheat will now be forward enough for the reaping machine. Nearly all the corn crops are, however, so much laid by storms that it will be necessary to use the lifting points which project in front of the reaper to lift the corn off the ground so that the reaper may cut the straw which it would in many instances pass over. When the home farmer has not these lifting points attached to the reaper they may be obtained and attached to any reaper; four of them are required, and they cost about 8s. each. It is this year of more importance than usual that the cereal crops should be cut early, as they are so much laid by storms that they will be greatly injured if not cut and set up. It is very rare that corn is cut early enough to damage the grain, but on the contrary, for it will endure much bad weather if cut and set up when the straw is dry, and will take less injury in this way than in any other. The reaping machine, with apparatus for tying by wire, is now sufficiently improved and useful for all purposes of cutting and tying corn, except where the wheat or oats are too long in the straw, for in such a case it is apt to hang up in the tying apparatus and impede the work. We hear that there is now to be obtained a one-horse tying machine which follows an ordinary reaper and ties the corn out of swathe, and it is reported that it meets all the objections above named and will tie any kind of corn, and by following the reaper keep pace with it in work. The home farmer must be prepared for the depredations of slugs upon all the late-sown crops, either of trifolium, tares, rye, &c., and many farmers are advised to sow lime in the caustic state to prevent the slugs doing injury to the young plants; but this seldom answers the purpose, as a shower washes away the lime and the plants are as much exposed as ever. A friend of ours says that he saved his mangolds this year by running half-grown ducks over the land to eat the slugs, keeping them on the land so many hours during the day, but more particularly in early morning and late in the evening, with a boy to mind them and keep them to their position. This reminds us that we did the same thing in the years 1833, 1834, and 1835, in which seasons the small black palmer worm destroyed the turnips and Swedes throughout many districts in the south-eastern counties. Various expedients were resorted to, such as drawing ropes across the plants to brush off the palmer, but we saw no remedy so good as that which we adopted. We employed all the ducks we had and bought others, keeping and minding them on the turnip land every day, by which means they ate up all the palmer and saved the turnips, which were of course, under such circumstances of more than ordinary value.

**Hand Labour.**—If the weather should prove fine in the harvest it will be necessary where labour can be obtained to take into work extra men and keep them hoeing roots, &c., which work has fallen so much into arrear that unless hoed at the critical time the crops will be ruined in growth. Something may, however, be done by horse-hoeing crossways as well as between the rows, for although they cannot be singled in this way it keeps them in a growing state until they can be singled out by women or boys. Another word of caution we must offer to the home farmer—that is, to keep the sheep changed and well fed with cracked beans, and lie on dry ground at night time, for we already hear that large numbers of sheep are suffering from rot and coathe in consequence of the succession of heavy rains in various pasture districts. Much hay is still about in the meadows, and much has been flooded and seriously injured, in which case spics may be used to give the hay an aroma. We have named this before and set forth its advantages; but, hay being damaged so much, straw, particularly oat straw, if well harvested will be of sufficient value if spiced when ricked at threshing time to use as a substitute for hay.

**A CAUTION TO APIARIANS.**—Messrs. Neighbour have received information that a man calling himself Wyld has paid a visit to Essex, representing himself as being sent by their firm for the purpose of purchasing stocks of bees on their account, and that

after obtaining the bees he has decamped without paying for them or his board and lodging at the hotel. Messrs. Neighbour have no man of this name in their employ, or one that at all answers the description given.

### THE SULTAN CLUB.

THIS Club, which has recently been formed, has issued the following rules, which explain its purport and the objects of its promoters:—

1, The object of the Sultan Club shall be to provide classes for Sultans at all good shows, and generally to promote the interests of Sultan breeders.

2, The number of members shall be unlimited. The annual subscription shall be one guinea, payable at the beginning of each year.

3, The Club shall be under the direction and management of a President, Committee of four, and Hon. Secretary and Treasurer. Half of the Committee shall retire annually, but shall be eligible for re-election.

4, The election of members is vested in the Committee, and shall be made by ballot, one black ball to exclude.

5, Any member who shall be guilty of trimming or any other dishonourable practice shall be expelled from the Club, and shall forfeit his subscription and all rights and privileges of membership.

6, In order to encourage the entries in Sultan classes, 10 per cent. of the annual subscriptions shall be devoted to a champion prize, to be awarded annually to the member of the Club who shall have made the largest number of points in the Sultan classes during the year. Points to count as follows:—First prize or cup, 6; second prize, 5; third prize, 4; fourth prize or very highly commended, 3; highly commended, 2; commended, 1. Points made at Birmingham, Oxford, the Crystal Palace, and the Dairy Show to count double.

7, Reports of all meetings and proceedings of the Club shall be sent to the various poultry papers.

8, No alteration shall be made in these rules except with the approval of a majority of the members of the Club.

**STANDARD FOR JUDGING SULTANS.**—A bird perfect in shape, style, colour, &c., to count in points one hundred.

#### DEFECTS TO BE DEDUCTED.

	Points.		Points.
Comb, too large or badly shaped . . . . .	5	Tail too small . . . . .	5
Crest, too small or loose, and untidy . . . . .	15	Legs too long . . . . .	10
Want of beard . . . . .	10	Faults of colour . . . . .	15
Want of hackle . . . . .	7	Want of size . . . . .	5
Wings tucked up . . . . .	5	Want of symmetry . . . . .	10
Want of leg-feather . . . . .	10	Number of toes not matching in a pen . . . . .	5

**DISQUALIFICATIONS.**—Any want of condition; absence of beard; leg-feather, or vulture hocks; plumage any colour but white; legs any colour but white; wry or squirrel tail; any bodily deformity.

The officers of the Club for the present year are H. R. Dugmore, Esq., President; Messrs. C. Atkinson, H. Beldon, H. W. King, and S. H. Shorrocks, members of the Committee; and the Rev. John Wright, Newborough Vicarage, Derby, being the Hon. Secretary and Treasurer.

### HOMING PIGEONS.

THE use made of homing Pigeons during the siege of Paris gave a great stimulus to the training of them as a practical pursuit apart from fancy. We have lately heard of two interesting cases in which they are being made use of. In one of the daily papers we read, "Since the conclusion of the war of 1870-71, in which Pigeons were frequently employed to carry messages when it was impossible to convey information by any other means, the breeding of these birds has been encouraged in every way by the military authorities of Germany, and large Pigeon houses have been established in all the principal fortresses of the empire. The experiments lately made were undertaken in order to ascertain whether the Pigeons after being confined for some time (as they often might be if used to carry messages in time of war) at a point distant from their proper home would still return to it when liberated. Accordingly 149 birds were carried from Aix-la-Chapelle to Metz and imprisoned in the latter fortress. After a month's confinement they were liberated, and by the morning of the following day 184 had returned to their cots in Aix-la-Chapelle, the bird which arrived first having flown from Metz to Aix-la-Chapelle, a distance of 112 miles, in four hours and thirty-eight minutes." We consider this a most interesting experiment. Great pains are now taken to train homers to fly immense distances, but few of their admirers have any idea of the time that they may safely be kept from home without fear of their forgetting it.

The other new experiment has been made by fisherfolk in the north-east of Scotland. "When the herring shoals are far from land and the weather is calm the fish-curer is usually kept in ignorance as to the success or otherwise of his boats until a late hour of the day, and is consequently unable to make adequate

preparation for dealing with the fish when they are landed. Profiting by the experience of the Parisians during the siege, an enterprising fish-curer at Wick a year or two ago procured several Carrier Pigeons from Antwerp, and placed one in each of his boats before they took their departure in the morning for the fishing ground. Early next morning the birds arrived at his home bearing messages from the boats, stating the extent of their hands, their whereabouts, and probable time of reaching the harbour. The experiment was so successful that some other fishermen followed the example set them. As a rule fishermen are not hasty in adopting improvements even when the object of them is to provide for their own comfort and conveniences; but it is such an obvious advantage for everybody to have the earliest information as to the result of the night's toil at sea that it is reasonable to hope that in another season or two the employment of Pigeons will have become general."—C.

#### VARIETIES.

It is with great regret that we have to record the death of Mr. Thomas Norwood, which took place somewhat suddenly at Salisbury on Monday, August 26th. Doubtless many of our readers knew him as an ardent fancier of poultry, especially white-crested Polish, which he bred up to a high standard of excellence and showed with almost unvarying success. He was an ornithologist and naturalist of keen observation, and had great powers of generalising from facts which came under his notice. We have often read with much interest his letters on the habits of birds, and we believe that had not his occupation in connection with the South-Western Railway at Salisbury taken up almost all his time his researches as an ornithologist would have been widely known. In his case, as in many, innate genius for one pursuit seemed to make way against all difficulties. When we had the pleasure of paying Mr. Norwood a visit we were charmed with his collection of stuffed birds, all preserved by his own hands, and with his extraordinary knowledge of the works of the great naturalists. He seemed mentally to live among them, and could repeat long passages from Waterton's essays. He was a great lover of flowers too, and in his garden by the railroad side had many choice roses. We are sure that many will join us in lamenting the fate that has cut short so interesting a life.

— We understand that a testimonial is to be presented to Mr. John Martin, late manager of the Patehall poultry yards, and formerly of those of Lady Holmesdale. The promoter is Mr. Herbert Jenkins of Aberdare.

— DORKING fanciers will be glad to learn that the Dorking classes at the Agricultural Hall Poultry Show will be judged by Mr. T. C. Burnell.

— We hoped that we had heard the last of the grievances of English exhibitors at the Paris Exhibition of poultry; it is not so, however. We have lately learnt that to this day the proper prize money has never been remitted to the owner of the famous Dark Brahmans which there took first honours. According to an understanding between the English and French Judges prizes of equal value were awarded to English and French birds. The authorities now try to repudiate this arrangement, and offer the miserable sum of ten francs without a medal for the first prize. One of the English Jurors has addressed an energetic remonstrance to Senator Krantz as a last resort before appealing to the highest authority on the British Commission.

— THE Lincolnshire Bee-keepers' Association, whose show was announced to be held at Long Sutton in connection with the Long Sutton Agricultural Society on September 17th and 18th, has been postponed to October 8th and 9th in consequence of the lateness of the harvest. The time for entries is extended to September 29th. The Hon. Secretary is Mr. R. R. Godfrey, Grantham.

— THE HARVEST IN ITALY.—A recent telegram from Rome states that the drought and the parching heat of the last two months have proved as disastrous to Italian husbandry as the deluvial rains that preceded them. The accounts that are sent from all parts of the peninsula constitute almost an unchequered tale of woe. Wheat and hay have done well in Latium and Piedmont, but elsewhere both have suffered so much from the inclemency of the weather and from caterpillars, that the returns of wheat are reduced in some places to less than half the usual amount, whilst the supply of hay garnered in will scarcely last through the winter. The same causes have acted deleteriously on maize. If present prognostications be verified, this cereal, the staple article of food of so large a portion of the peasantry, will fail to an extent which is terrible to think of. The vintage presents somewhat more reassuring prospects. The earlier kinds of grapes were destroyed by the rain and hail, but the later kinds bid fair to make up for their deficient quantity by the excellence of their quality.

— A NEW industry is about to be established in the State of Maryland in the shape of beet cultivation, which is proposed by a company of Germans, who have offered to come to Baltimore

and set up a large sugar factory, provided that the farmers will plant 2000 acres at least with German beetroot. They guarantee to take the whole produce at the rate of \$5 per ton. It is considered that good land ought to produce thirty tons of beet per acre; and, as the climate is a suitable one for this crop, it may be reasonably expected that before long a flourishing sugar industry will be added to those already existing in Maryland.

— FULLY one-half of the beginners in thoroughbred poultry breeding, says the *Prairie Farmer*, engage in the business because they think it will be an easy way to make money. They think that if celebrated exhibitors can sell eggs and fowls at high prices, why of course anybody can do it if they only have the fowls and eggs to sell. The more they think about it the easier it looks, and they proceed to invest in fowls and eggs, to build houses and yards, and figure up the expected profits, which are seldom if ever realised. This counting chickens before they are hatched is a very easy but an uncertain business, and furnishes the only exception to the rule that "figures don't lie."

#### THE RESULTS OF BEE-KEEPING IN 1879.

SURELY this year 1879 will be long remembered in the apian world as "the black year," for not only has there been no honey harvest at all, but in most parts of England bees have been starving and are dying off rapidly.

On my return home on the 16th of August after a month's absence some hives were found absolutely foodless, not a particle of honey being visible in any one cell, nor, I am persuaded, was there a single pound in all the other stocks put together. Breeding had ceased in nearly all, and no pollen appeared to have been stored. It was evident that prompt measures must be taken to save them; accordingly the first dry day we began operations by simultaneously doctoring three bar-framed stocks standing side by side. All the combs with brood found in any of them after sweeping off all the bees were collected together and given to the strongest of the three; the other two hives were joined together under a pure Italian queen bred here this summer; so we made two strong stocks of the three weak ones. In another part of the apiary we joined two other rather weak stocks, giving the brood of one to a third stock with an imported queen. Thus my thirteen hives were reduced to eleven, all which I set to work at once to feed, and they have been fed continuously ever since. Sixty-two pounds of sugar have been taken down during the week past, representing about 90 lbs. of food. The result is highly satisfactory. Poverty has been replaced by wealth; the silence of despondency has given place to the cheerful hum of prosperity; breeding in all hives is going on, to judge by the daily increasing quantity of pollen that is being carried into all the hives; and in the swarms which had hardly any combs building has been going on without intermission. I shall give my bees about a hundred-weight of sugar in addition to what they have already absorbed in the course of the next fortnight, during which time I hope the increase of the population will be large. My apiary will then be allowed to shift for itself till towards the middle of October, when if necessary another feeding will take place to put them in a condition to face the winter.

I earnestly recommend all bee-keepers to lose no time in doing as I have done if they desire to continue their apiaries. The expense, of course, is something, but nothing to the value of these stocks. I reckon that they will cost me in sugar at 8d. per lb. on an average from 4s. to 4s. 6d. a piece. Crushed loaf is what we are chiefly using. I am content if each hive takes down 2 lbs. of syrup per diem. Every sort of bottle feeder is in requisition, such as water carafes, old medicine and pyretic saline bottles, besides Neighbours' feeders, &c. Flower pots inverted are capital covers for the bottles in the open air, keeping out robber bees very effectually.

I may mention that I have been pleased to find all my young queens turn out successful breeders: not one has failed. At one time I expected that few of them would have mated properly owing to the extreme uncertainty of the weather all through June and July.—B. & W.

#### HIVING CONDEMNED BEES—SURPLUS QUEENS.

SEVERAL readers besides a correspondent, "H. A. S., Surrey," doubtless desire information on this subject. In making stocks by driving from condemned hives it is desirable at this season to have not less than 5 or 6 lbs. of bees, and three or four lots will have generally to be put together to effect this object. If these are constantly fed, a guide only being given to them, they will build splendid combs and raise abundance of brood for passing in fine condition into winter. In order to place them in a frame hive they should be driven all into one skep, or if their number be so great as to make this inconvenient, into two skeps. The frame hive, having its bottom board removed, is placed upon a sheet and propped up by a piece of wood or couple of stones, so that the bees have ample room for entering, and then the lots are thrown down together against the hive door. They will not be

long in passing in and clustering in the frames, when the hive may be lifted on to its bottom board, placed on its stand, and feeding at once commenced; but great care must be taken to prevent stranger bees taking the sweets, or robbing is almost certain to follow. Surplus queens with condemned bees may be utilised if queenless stocks intended to winter are known to exist, but those with little experience will be wiser in allowing the bees to settle the question of which queen shall be mother, or mother-in-law, to the whole community.—F. CHESHIRE.

### EXAMINING HIVES.

THOROUGH, not superficial, examinations of hives should be made twice or thrice a year in all apiaries. Many bee-masters do not limit their internal examinations. They know that when a hive is not doing well there is something wrong, and they try to find out the real cause. In almost all apiaries it often happens that a hive not considered the best there commences early in the season a career of prosperity and runs well ahead of all the rest—increases its distance in front till the end of the season.

During the spring and summer months we examine the internal operations of hives frequently. Such examinations in times of prosperity afford us much pleasure. It is a satisfaction to a real apiarian to turn up a hive and see the great progress his bees have made in comb-building, brood-rearing, and honey-storing since he last examined the hive. If one or more hives are not prospering an examination may discover the cause. Some queens are too old and in their dotage, some young ones are drone-breeders and useless; some hives are covered internally with damp, which moulds and rots the combs; often combs are overloaded with pollen; some hives are quietly entered by robbers, which carry off every particle of food; and too often hives are spoiled by foul brood, which is a malignant disease. Hives suspected of foul brood should be carefully examined at the end of the breeding season, in other words, when cells are empty of healthy brood. This happens three weeks after first swarming, and also in the month of September when breeding generally ends. Foul brood is dead brood, and is of course incurable. It bears this name because dead brood, dead maggots, like other dead animals emit a very offensive smell. Cells containing foul brood have lids on them, and are what is technically termed "sealed up," and such cells sealed up are easily discovered when there is no healthy brood in hives. Men of experience can detect by sight foul brood amongst healthy brood, and moreover can smell it where it exists by placing their noses at the doors of hives. Bar-frame hives facilitate the examination of combs for foul brood. Knowing well the evils of this terrible scourge, I advise all to follow the practice of removing bees from hives in which it is discovered.

In the month of May this year I saw that the hive I considered the best in my garden was not working so fast as others beside it. An examination was made, which revealed the fact that it had lost its queen by death and had reared a young one at a season when there were no drones. The young queen was a drone-breeder and useless; she was at once removed from the hive and killed, and a fertilised queen put in her place. Thus the hive was saved. Queens die when four years old, and therefore should not be kept longer than their third year. The aim of the bee-master should be to have as many young queens in his apiary as he conveniently can.

I remember buying a good hive some years ago. It was placed amongst other hives, and prospered as well as any of them for a while. I noticed that it loitered and fell behind the rest; on making an examination internally of this hive I found a drone comb in the centre of it, running from top to bottom and from side to side. This drone comb was the hindering cause. Working bees cannot be bred in drone comb, hence I cut half of the central drone comb out and fixed a piece of worker comb in its place, and thus gave the bees liberty to spread-out their worker brood from comb to comb, and they were not slow in making use of the comb given to them, for it was speedily filled with brood, and the hive prospered fast enough afterwards. Examinations in August should be made to ascertain if hives have a sufficient number of combs filled or partially filled with brood to give them a strong population of young bees for winter and spring months. Hives well filled with young bees in autumn are placed on a high vantage ground for the year following. Hives containing six and seven sheets of healthy brood at the present time will contain five or six seams of healthy bees in March next, making them strong enough for any amount of work. Our letter of advice on feeding bees which lately appeared in the Journal made it clear that vigorous feeding in August caused bees to breed extensively.

By examining hives in the months of April, August, and September any bee-keeper may see whether they condense the internal moisture of hives or otherwise. If the inner surfaces of the hives are found covered with moisture he will wisely and naturally conclude that they are either badly ventilated or made of bad materials. Hives should be made of materials or so constructed that internal moisture never rests on their inner surfaces. Perfect ventilation of hives is a point of great importance in apiculture.

The robbing propensities of bees are strikingly manifested as soon as the flowers of the fields fail them. The industrial instincts

of bees never forsake them. When they cannot get food in the fields they become robbers and burglars, and enter the houses of their neighbours if not well guarded. Yesterday (August 20th) we turned up a large hive to examine it, and found it was being robbed. It had lost 10 or 15 lbs. of weight. We shut the door of this hive with a great many robbers inside, with a view to find out where the robbers came from. A handful of flour was procured, the door was opened and the robbers gushed out like a swarm, and many of them were marked and made dusty as millers by the flour and easily traced. They all came from one hive standing about 50 yards off in our garden. In such cases in which the bees of one hive are permitted to enter and carry off the stores of another hive, no measures can be adopted to prevent or stop this robbing but the removal of one of the hives to a distance of one or two miles for a while. At the end of the honey season, and while bees are being artificially fed, their doors should be contracted to enable them to prevent strange and robbing bees from entering their hives. Frequent and thorough internal examinations of hives in large apiaries we commend.—A. PETTIGREW.

### OUR LETTER BOX.

FOWLS INJURED (T. A. J.).—You have treated them quite correctly. Let their food at present be soft.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.						Rain.
	Baromet. at 3 p.m. at 6 p.m. at 9 p.m.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		In sun. On grass.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass.			
1879. August Sept.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.		
We. 27	29.681	55.5	54.4	S.S.W.	58.0	62.6	52.3	68.9	50.1	0.636		
Th. 28	29.523	60.0	59.0	S.W.	58.3	65.5	55.0	100.0	56.4	0.339		
Fri. 29	29.728	61.5	56.1	N.W.	58.0	66.2	55.3	112.7	59.6	—		
Sat. 30	29.991	57.8	53.0	N.W.	57.7	69.2	48.1	121.2	45.0	—		
Sun. 31	30.045	57.9	51.7	N.W.	57.8	65.1	44.8	123.5	49.2	—		
Mo. 1	30.450	57.0	49.5	S.S.E.	56.9	65.5	39.6	107.4	36.0	—		
Tu. 2	30.447	56.0	51.8	S.W.	56.0	69.5	41.2	115.3	36.9	—		
Means	29.981	58.0	53.7		57.5	66.5	49.0	107.0	46.3	0.086		

### REMARKS.

27th.—Heavy rain, with high wind nearly the whole day; finer in evening; gusty wind at night.  
28th.—Rain all the morning; fine with bright sunshine at 2 P.M.; clear breezy evening.  
29th.—Fine day throughout, but rather overcast after 2 P.M.; clear moon-light evening.  
30th.—Fine bright day, cool and pleasant; bright moonlight night.  
31st.—Very clear, fine, cool day; very bright moonlight night.  
Sept. 1st.—Clear bright morning, very cool; hazy in afternoon; clear moon-light night.  
2nd.—Misty morning; fine bright day afterwards; calm moonlight evening. First two days very wet, but afterwards fine bright weather, with very high barometer. The mean temperatures are, however, with the exception of the sun maximum, lower than those of last week.—G. J. SYMONS.

### COVENT GARDEN MARKET.—SEPTEMBER 3.

KENTISH Filberts are now arriving in small quantities, but do not sell very freely, trade still remaining very quiet.

### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	sieve	0	0	0	Melons.....	each	1	0
Apricots.....	dozen	2	0	0	0	Nectarines.....	dozen	4	0
Cherries.....	box	0	0	0	0	Oranges.....	100	4	0
Chestnuts.....	bushel	12	0	0	0	Peaches.....	dozen	4	0
Currents.....	1	sieve	3	6	4	Pears, kitchen.....	dozen	0	0
Black.....	1	sieve	4	6	6	dessert.....	dozen	1	0
Figs.....	dozen	1	8	3	0	Pine Apples.....	1	lb	8
Filberts.....	1	lb.	0	7	1	Plums.....	1	sieve	0
Cobs.....	1	lb	0	9	1	Raspberries.....	1	lb.	0
Gooseberries.....	1	sieve	2	3	6	Strawberries.....	1	lb.	0
Grapes, hothouse	1	lb	1	6	4	Walnuts.....	bushel	0	0
Lemons.....	100	4	0	8	0	ditto.....	100	0	0

### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	2	0	4	0	Mushrooms.....	pottle	1	6
Asparagus.....	bundle	0	0	0	0	Mustard & Cress.....	pannet	0	0
Beans, Kidney.....	100	1	0	1	6	Onions.....	bushel	3	6
Beet, Red.....	dozen	1	0	2	0	pickling.....	quart	4	0
Broccoli.....	bundle	0	9	1	6	Parsley.....	doz. bunches	2	6
Brussels Sprouts	1	sieve	0	0	0	Parsnips.....	dozen	0	0
Cabbage.....	dozen	1	0	2	0	Peas.....	quart	0	9
Carrots.....	bunch	0	4	8	0	Potatoes.....	bushel	3	6
Capsicums.....	100	1	6	2	0	Kidney.....	bushel	3	6
Cauliflowers.....	dozen	3	0	6	0	Radishes.....	doz. bunches	0	0
Coleworts.....	doz. bunches	2	0	4	0	Rhubarb.....	bundle	0	0
Cucumbers.....	each	0	4	1	0	Salsify.....	bundle	0	9
Endive.....	dozen	1	0	3	0	Scorzonera.....	bundle	1	0
Fennel.....	bunch	0	3	0	0	Seakale.....	basket	0	0
Garlic.....	1	lb.	0	6	0	Shallots.....	1	lb	8
Herbs.....	bunch	0	2	0	0	Spinach.....	bushel	2	6
Leeks.....	bunch	0	2	0	4	Turnips.....	bunch	0	0
						Vegetable Marrows			



## WEEKLY CALENDAR.

Day of Month.	Day of Week.	SEPTEMBER 11—17, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.				
11	TH	Horticultural Exhibition at Norwich.	68.7	47.0	57.8	5 30	6 24	10.0	4 8	25	3 22	254					
12	F		69.1	44.8	57.0	5 31	6 21	0 33	4 34	26	3 43	255					
13	S		68.4	45.7	57.0	5 33	6 19	1 51	4 56	27	4 4	256					
14	SUN	14 SUNDAY AFTER TRINITY.	67.0	46.1	56.5	5 34	6 17	3 11	5 14	28	4 25	257					
15	M	[mittrees at 11 A.M.]	67.5	45.9	56.7	5 36	6 14	4 33	5 30	29	4 46	258					
16	TU	Royal Horticultural Society—Fruit and Floral Com-	68.4	46.8	57.6	5 38	6 12	5 57	5 48	●	5 7	259					
17	W	Exhibition at Newcastle-on-Tyne.	68.9	44.9	56.9	5 39	6 10	7 22	6 5	1	5 28	260					

From observations taken near London during forty-three years, the average day temperature of the week is 68.3°; and its night temperature 45.9°.

## BULBS.

**T**HE season for looking over the stock of bulbs and purchasing new ones is come round once more. It comes with the shortened days and colder nights, which remind us that summer is fast waning. Well, I have heard that people who live to hunt hate summer as the time which deprives them of their favourite sport, and love winter as the season of thorough enjoyment. It can never be so with gardeners. If they have not the advantage of hothouses or green-houses the depth of winter must be somewhat dreary, and they must look forward to spring and summer as the most enjoyable seasons of the year. But with plenty of glass houses winter has almost more to interest than summer, inasmuch as plants grown in heat require more care and skill than plants grown out of doors. But the stroll on the velvet lawn is then over, and the blaze of summer flowers is gone, and the rich foliage of the subtropicals has departed, and the last Rose blown, and who can think of all this without a sigh? However, that time has not come yet. We are in September, and though there are scarcely any partridges, and the few there are get away in the corn which should have been cut weeks ago, we may yet enjoy some time of warm air, with now and then a chilly night and a somewhat wintry day. The walks will soon want sweeping almost daily, those beautiful Acacia and Plane trees shed their leaves so soon. Never mind, they are green enough still, and in that matter of dead leaves as in other things, "sufficient for the day is the evil thereof."

But the bulbs. How tempting they look in the seed shops as you pass by and see the boxes full of Hyacinths, and Crocuses, and Tulips, and Narcissuses! How pleasant it would be to go in and buy just what one chose of the fine round rich-looking bulbs of all sorts, "regardless of expense," and carry off the booty to the shades of the potting house for the future decoration of greenhouse and home; but it must not be. Bulbs are expensive, as they ought to be, when you think of the toil, and labour, and risk incurred in Holland and Belgium in their production; still we may look at them at least, for they are beautiful in themselves in an artistic point of view. People are apt to regard Onions as vulgar things, to be associated with dirty hands, and dropped h's, and bad smells; but to me a fine fat Spanish Onion, sleek and polished, beautifully tinted, and still more beautiful in form, is a thing to be much admired and not snubbed, as it usually is. I do not despise it when it comes to table, but I can hardly help half regretting that the only way we have of using a thing in itself so beautiful is by eating it. Such is the fate of Onions.

But all bulbs have a peculiar interest of their own, though they are so various in their flowers and in their mode of treatment. There is no arguing from what will suit one to what will suit another, like the boy who argued with his father that he would like, when he was grown up, to marry his dear, good, kind grandmother in this way: "You married my mother, why should not I marry your's?"

NO. 962.—VOL. XXXVII., NEW SERIES.

The same rule will not always apply to bulbs more than in marriage, except that generally most of them like plenty of water for their growing season, and then a dry, or moderately dry, time for their season of rest.

Bulbous flowers are so kind in coming early to remind us of approaching spring. Snowdrops grow wild plentifully in this county, so with the first perceptible lengthening of the days we can gather handfuls of them if wet ground is no objection. Children fill their hats with them, and you see them in every cottage window. They have no reason for having the same colour as their snowy surroundings like the Scotch hare, and the Arctic fox, and the Polar bear; but it seems appropriate that the first flower of spring should look snowy. And they linger on so long—long enough to greet their gorgeous-coloured friends the Crocuses. I pity those who do not like yellow flowers, they lose so much of the beauty of the spring garden—the yellow Wallflowers, and the yellow Pansies, and the yellow Alyssum, and above all the golden Crocus. Plant Crocuses by hundreds, and you will not be sorry in the bright sunshiny days of treacherous March, when the east wind is blowing bitterly one side and the sun shining brightly on the other side of the hedge. I have heard of a good clergyman who used to give a Crocus party just at the time when his garden was gay with their purple and gold. Certainly we have to pay for their beauty in the long tresses which are left behind; and even when these are twisted up, as farmers like to twist up their horses' tails, they look ugly enough; but notwithstanding that, they must be grown in sufficient quantities if possible to give sheets of gold in broad belts of their glittering cups or in complete circles, as most convenient. We have to pay for the glorious song of the thrush in the spring and autumn mornings by the loss of a certain amount of fruit, but his song is well worth the payment. I plant my Crocuses where the subtropicals are afterwards placed in summer; but many place them deep enough to grow the bedders over them, though this must somewhat interfere with the proper digging of the beds.

Another beautiful spring bulb, besides the Snowdrop, which grows wild in abundance, is the single Lent Lily or Daffodil. If Easter falls early enough in the year no flower is more useful for church decoration. It lasts well, and it can be used without stint, so that the decorations done with it always look particularly rich in colour. It likes the sunny side of the hill. Clumps of it which I have introduced into the garden have not done well, as I could not give them enough sun. It is best, however, to enjoy such wild beauties in their native haunts and to see them combined with the wild scenery of the rocky wood, or where they frequently grow, in the more domesticated pasture of the sheltered orchard. Speaking of wild bulbs, there is one little beauty which grows in the sand on the coast of Devon, I will not say where for fear of destruction. I have no doubt it is well known to many readers of this Journal. It is exceedingly rare, and therefore requires protection, for few can find such things without wishing to carry away a few to perish miserably in their distant gardens.

I am fond of trying rather out-of-the-way bulbs, such as

NO. 1615.—VOL. LXII., OLD SERIES.

are not commonly grown. Many of them are very beautiful; for instance, *Anomatheca cruenta*, and *Camassia esculenta*, and *Triteleia uniflora*. There is something peculiarly interesting about plants which come up quickly, flower, and die speedily. The suddenness of the appearance and disappearance, the short life, and the beauty of the rigid form which most of them assume on account of the parallel veins which are common to all endogenous plants, give them an interest all their own. *Anomatheca* grows like a weed in Cornwall, and is beautiful in large patches; *Camassia* makes a good pot plant forced in early spring; and *Triteleia* is very hardy, and a great attraction on the rockery among other small but delicately marked flowers like itself. *Schizostylis* was not only useful in the days of spelling bees, but is an excellent flower for the autumn, coming with the *Chrysanthemum* and making a lovely nosegay in a large bunch by itself. This, too, quite revels in the Cornish climate, and will flower there the whole winter, but in this county it must be taken into the house.

Stove bulbs are often most beautiful. Take two only—and how much we owe to them for constant and fragrant flowers—*Eucharis amazonica* and *Pancratium fragrans*. The first associated with the *Vallota*, or *Scarborough Lily*, is one of the most beautiful plants imaginable. If the *Lily* has no scent it has great beauty to make up for it. It is a little wayward—that is to say, any old woman can grow it in her window, but somehow gardeners are often not half so successful in their green-houses. It may be they treat it as if it required no treatment; certain it is in grand gardens it frequently does not look so well and healthy as in the parlour window. But why should not plants have a will of their own, and assert it too? Has it not been discovered that there is scarcely any difference between animal and vegetable life, and that it is quite impossible to say where one begins and the other ends. If chloroform makes the animal nonsentient it has the same effect on the Sensitive Plant, which loses its power of contraction under the influence of the anæsthetic just as the animal does, and recovers it when the influence is removed. Very well, in the same way perhaps the *Vallota* says to itself, "I like this good old soul who watches over me so tenderly in her pretty cottage window, and I will reward her with a flower;" but it does not care to be grand among other grandees. Seriously, there are plants which seem thus to accommodate themselves to humble life more than to the stately life of the conservatory. A lady said quite seriously the other day she wished that dogs could go to church, she was sure they would be so much the better for it. There is nothing wrong in fancifully attributing to animals and plants a little more feeling than they really possess; but to read Sir John Lubbock's works makes one feel as if science was almost inclined to go in advance of the whimsical notions of those who like to attribute sense and feeling to their home pets.

Well, bulbs are great pets of mine in the ground and out of it, and I am looking forward to taking a holiday some day among the bulb farms when I have no time to go further. The only difficulty in Holland might be the language, though the Dutchmen I have met with have spoken English as well as myself. It is not a language one would care to learn, even to talk to the labourers on the bulb farms, because it has no literature of its own. Flemish, to which it is nearly allied, is the most painful of languages to the ear, as everyone knows who has stayed to listen to the eloquent preachers in the beautiful churches of Antwerp. We let our Sunday school children buy bulbs for rather less than half price at this season, and then by-and-by in spring there is a little show in the coffee tavern, and prizes are given for the best *Hyacinths* and *Tulips*, not in money but in various useful articles. This has been a great success.—A GLOUCESTERSHIRE PARSON.

#### OUTDOOR FIG CULTURE.

EXCEPTING in the south the Fig does not succeed as a standard. It appears to thrive best near the coast, which has been noted not only in this but other countries, and may be owing to the mildness, and partly to the genial humid atmosphere. It succeeds, however, very well inland if it be afforded a south aspect, and the soil is not too rich, which induces too luxuriant and soft growths for bringing fruit to maturity. In almost every instance where the Fig is found to succeed the soil is calcareous and shallow, resting frequently on chalk or a gravelly subsoil. I have seen very excellent Figs produced by trees that had not more than 3 feet width of border to grow in,

in front being a gravel path that prevented the extension outwards of the roots; and against a building with a south aspect trees produced fine fruit though they were planted in a paved yard. In both instances thorough drainage was provided, and the space for the growths was not nearly so restricted as frequently is the case with trees planted in wide borders of rich soil and trained to garden walls. They required very little attention in pruning and training, except in securing the growths to the wall and thinning them out where too crowded in summer. In most instances Fig trees in gardens grow too luxuriantly, producing indifferent crops; this may be rectified by root-pruning. For full-grown trees take out a trench 3 feet from the trees and as deep as the roots, making the trench about 2 feet wide and parallel with the wall. This should be done before the leaves fall or at the close of September. If the border be well drained the trench may be filled with two-thirds loam and one-third chalk or old lime rubbish, placing at the bottom 9 inches of brickbats, and over it 3 inches of chalk or the riddlings of lime rubbish. The soil should be moderately dry and placed in the trench as firmly as possible. The surface soil in the space between the trench and the wall should be removed down to the roots, and the compost recommended for filling the trench should be worked in among the roots. If the weather be dry give a good watering and mulch with litter. The shoots should be thinned out so as to leave them about 9 inches apart, which will admit light and air to those retained and assist their ripening. Instead of filling in the trench as above a single brick wall may be built without mortar against the face of the 3-foot-wide border; this will restrict the roots considerably to the narrow border without confining them to it entirely, as they will find their way through the open brickwork, and when the trees are making too much wood a trench may be taken out just clear of the border wall, replacing the old soil or fresh as may be considered necessary.

In the case of trees that are planted in ordinary borders and that are unfruitful it is desirable to lift the trees to improve their condition. At 3 feet distance from the trees take out a trench and remove the soil from amongst the roots with a fork; lift the trees with as large a ball of roots as possible; cover the roots with mats to prevent their being injured by exposure to the air. Take out the soil to the depth of 36 inches, and 4 feet in width. At the bottom 3 feet from the wall must be a drain of 3-inch pipes having a suitable fall and outlet. In the case of a gravelly or otherwise naturally drained bottom the drain will not be necessary, whilst in the case of a heavy retentive subsoil it will be desirable to make a concrete bottom to prevent the roots going down. Place in 9 inches of rubble, 3 inches of chalk or lime rubbish, and form a firm border of two-thirds good loam and one-third chalk or old lime rubbish. In replanting the trees keep them a little raised above the general level of the border. Planting should be done when the leaves show indications of falling. In a border of the width and composition described above Fig trees will thrive much more satisfactorily than in one of greater width and formed of richer material. A 6-foot border is wide enough for Fig trees against garden walls, and it would be advantageous to confine them to it by a solid wall in front and a concreted bottom.

In ordinary well-drained fruit borders Fig trees usually produce satisfactory crops, the chief point to be attended to is keeping the shoots rather thin to admit light and air. If the trees grow too luxuriantly root-pruning must be practised, it being the most efficacious mode of inducing a fruitful condition. Root-pruning should be performed in all instances as soon as the leaves commence falling. The only suitable form for the Fig against walls is the fan-shape, and if the trees have but one stem the energies of the plant will be concentrated on the head, whereas when the trees are allowed to produce suckers, as they do in abundance, they crowd and rob the parent stem. The great difficulty to contend against is over-luxuriance, arising chiefly from too rich a soil. As winter pruning can only be practised at the expense of the fruits, it is advisable to so train the trees that little winter pruning will be necessary. It is usual to prune in the spring, but it should be performed as soon as the leaves fall, merely removing any long bare branches so as to admit of well-furnished growths being trained in their place, but if summer disbudding has been attended to there will be little need of the knife.

Disbudding should commence when the shoots are about 3 inches long, reserving only the short-jointed in sufficient quantity for training-in. This disbudding will need to be

practised up to August, therefore look over the trees frequently and remove all superfluous shoots, so that every leaf of the future year's bearing wood obtains free exposure to light. Pinch off the young shoots when they reach 4 to 6 inches in length. Trees that do not make more than a few inches of growth will not require pinching. In pinching it is only necessary to break off or remove the very tip of the shoot. To allow leaves to form and then remove them is a needless waste of the energies of the plant. Cut out some of the shoots altogether when they become too crowded, and lay-in others at full length, except where it is necessary to prune back to secure a fresh supply of young shoots from the lower part, seeking to have the lower part and centre of the trees equally furnished with bearing wood.

Except near the coast the trees require protection in winter, which should be afforded in December and removed in March. Mats, straw, or spruce branches may be employed. The safest plan is to loosen the branches from the wall, tie them together, and cover them with straw, and finally with mats; but with the wood short and well ripened the necessity for protection is not so great as when the growths are long and sappy.

No tree is so much benefited by top-dressings and copious supplies of water when swelling the fruit as the Fig. The top-dressings and the waterings must, however, only be given to trees in a fruitful state that have not a tendency to grow too luxuriantly. The top-dressing is of two kinds—one given in autumn just before the leaves fall, removing the surface soil or summer mulching down to the roots, replacing it with turfy loam with a tenth of old mortar rubbish and a twentieth part of crushed bones, making the fresh material firm about the roots; and the other is giving a mulch over the roots of short decayed manure kept moist by watering as may be needful. In the warm parts of the south of England Figs may be grown and fruited to advantage in the form of low bushes or open standards, which form is the best that can be adopted for culture in the open, the trees being confined to single stems, requiring in the matter of pruning the least attention, as it is only necessary to occasionally thin out and shorten some of the branches. Even in the south the warmest situation must be chosen, the soil must not be too rich, and if it overlies chalk or a gravelly subsoil success will be more likely. Brown Turkey is the best variety for outdoor culture as bushes or standards; Brunswick, though not so prolific, is the best for cultivation against walls.—G. ABBEY.

### GLADIOLI.

I AM afraid that this extraordinary season has to answer for the semi-failure of many flowers. On the 24th of August the hay was lying down in my parish soaked with rain, and no attempt has yet been made to cut the corn. The autumn Show of cut flowers at the Crystal Palace was abandoned on account of the dearth of good autumn flowers this year. At the Exeter Show there was only one exhibitor in the open class for Gladioli and Roses, and these were by no means good; indeed the Roses were so bad that we did not deem them worthy of a prize. With regard to Gladioli, Mr. Dobree of Wellington showed some very good spikes, but his stand was uneven, and some of the spikes had very small flowers. He had some good seedlings of his own, one of the best of which he was good enough to name after my wife. There were no Dahlias and no Hollyhocks; only one stand of herbaceous plants, which was so poor that no prize was adjudged. The Gladioli of Mr. Dobree, in spite of their uneven character, were the best flowers shown, and I have been requested to write a few lines on the culture of these flowers.

In a contemporary of yours a gentleman has been strongly urging the desirability of leaving the bulbs in the ground through the winter; in fact, to leave them like Lilliums, and never disturb them except to renew the soil. This is what I may call startling advice, and is foreign to the experience of many large growers. I do not know whether I may be called a large grower or not, but I expend about £10 a year in Gladioli. I grow the plants in lines between dwarf Roses, and a very fine effect they produce. They bloom long after the first bloom of the Roses is over, and the stimulating mixture I give the Gladioli causes the Roses to make wood at the proper time; at least it would make them do so in any other soil than mine.

I never leave the corms in the ground during the winter. My practice is to take them up as soon as the flower stalk is drying up, to leave them in the sun with the earth on, and then

to rub them dry and put them away till April. I have tried leaving a few out of doors during the winter, but these have gradually died away till I have only one left. A correspondent of mine who lives at Chipping Norton writes me that a friend of his has tried this practice with the most disastrous results. He left his corms in the ground last season and lost nearly every one of a collection of 250. His opinion is the same as mine as to the mode of treatment.

I hope this letter may induce some large grower to give us his experience. Gladioli are very expensive whether French or English. It is rather a stiff price to pay £10 to £15 a hundred for them, which is the price of the best English varieties, and then to lose them is a rather serious matter.

While speaking of these beautiful flowers I desire to say a few words as to their value for church decoration. Harvest festivals will soon be being held all through the country, and I know of nothing more suitable for altar vases than these handsome spikes; when mixed with corn, too, the effect is very good. Another flower most useful for these festivals is *Tigridia Pavonia*. These flowers when festooned with Wheat or Barley are very effective.

I wish someone would undertake an election of Gladioli. The number of varieties is so large that to take up a list like that in Mr. Kelway's catalogue and try to select a limited quantity from it is a most bewildering labour. Will any large grower give a list of the very best varieties? This with information respecting them and their culture would be valuable to others besides—JOHN B. M. CAMM.

### FORCING STRAWBERRIES IN POTS.

I QUITE agree with your correspondent Mr. Brotherston, on page 184, that it is unwise to criticise those who differ from you in opinion or practice, particularly when the writer has not carefully studied the reasons on which that difference is based. It is evident from the style of Mr. Brotherston's remarks, either that he does not know the object of my notes, not having attentively read the articles which preceded them on the same subject, or that he has only perused them in a very careless manner. I think that every correspondent ought to be most careful not to put a wrong construction on the writings of another. If Mr. Brotherston will oblige me by kindly reading my notes on page 143, he cannot then fail to see that I am setting two systems of culture side by side in order to show the great advantage the one possesses over the other. The first system, in which the plants are separated from the parent plant and placed in small pots, being the one advocated by Mr. Ogle, which I entirely condemn; the other system—viz., that of layering into fruiting pots, being the one I adopt. Mr. Brotherston according to his own account does not force Strawberries, and as he admits he has never seen the first system (Mr. Ogle's) practised, I may fairly infer that he is not so competent to judge of the respective merits of plants grown under the two systems as those who practise them and have the plants standing side by side.

Plants grown in 3-inch pots in close frames might be considered by many growers fairly good, but when placed side by side with the plants grown under the other system we should not hesitate in calling them 'weak and puny.' It is only by comparison that we are able to judge of their respective merits. Now with regard to the washing of small pots I would ask, Is it customary amongst gardeners to use them dirty? If so, I suggest that the sooner the practice is discontinued the better. Lastly, as to removing plants from one pot to another. After long and careful observation I have arrived at the conclusion that they cannot be removed (from dirty pots especially) without the roots being more or less injured, consequently the plants receive a check which will be perceptible in proportion as they are of hardy or delicate constitution.—WM. BARDNEY.

### FRANCOA RAMOSA.

THIS plant is too rare now, and the request of "WYLD SAVAGE" for information respecting white decorative flowers for bouquets, chaplets, wreaths, &c., reminded me to send you a flower spray. The same circumstance reminded me to look for information respecting it. Imagine my surprise at not finding the least reference to it in plant catalogues to which I have access. So beautiful is it with me that several ladies and gentlemen have driven considerable distances to see it. It is now in flower, and forms a splendid contrast with *Pelargoniums*, *Coleuses*, *Alpine Cyclamens* (now flowering). *Tuberous Begonias*,

Lilies, Fuchsias, Gesneras, and Achimenes. I have, therefore, no hesitation in saying a word in favour of its extended cultivation, especially as that is so easy. It is a perennial, and propagated by seeds, or divisions of the plant after flowering. It produces seed freely, but there will be a greater certainty of fructification under glass. It is not quite hardy, but I believe there are instances in favourable localities where it has flowered freely outside. The leaves are also handsome, and contrast well with other greenhouse or window plants. I know of no other window plant so handsome, that will bear so much hardship, and with so little injurious results. With the aid of occasional applications of liquid manure it has flowered freely in a 5-inch pot, and when grown on slowly and not forced very few white flowers, excepting perhaps Orchids, remain so long in bloom.—W. J. M., *Clonmel*.

### THE STAPLEFORD ROSES.

"HAVE you seen the Stapleford Roses?" "What do you think of Bennett's Roses?" are questions which I have been asked scores of times this season. "We hear a great deal of them," it was said over and over again; "but no one seems to care to exhibit them, and there is too much of the dark horse about them." To all this I was obliged to plead ignorance, for I had not seen them; and so about a month ago, on my way to Taunton, I determined to spend some time at Stapleford, examine the Roses for myself, and report progress. Happily in this dreary season I chose a very fine day; and so, although a considerable amount of mud was clinging to my boots, there was no moisture overhead, and I was enabled to inspect the experiments that are being carried on, notes on which I now give to the readers of the Journal.

Stapleford is not an easily accessible place. It is nine miles from Salisbury and four from Wilton. You can procure at the latter place a conveyance at the Pembroke Arms, and after a drive presenting no important features arrive at your destination. Mr. Bennett's house is a good, new, square-built farm residence, suggesting ideas of comfort and ease, but, with the exception of a greenhouse which catches the eye, not particularly suggestive of floriculture.

Mr. Bennett's mind had long been exercised on the subject of Roses. He had grown them, had visited the French nurseries, had bought some from the French Rose-growers, and had been "done" by them, notably in the case of Duchess of Edinburgh (which had been substituted for Duchesse de Vallombrosa, the Rose he believed that he had bought), and of which he destroyed five thousand when he found out the deceit practised on him. He has sent out, too, a Rose which has not received the recognition it deserves—Mabel Morrison, obtained at Leicester; but he had been impressed by the fact that artificial fecundation had not been resorted to, and that the beautiful Roses we now have are the result of chance hybridisation. I remember some years ago visiting old M. Margottin at Bourglais-Reins, and his telling me that he thought raisers had been depending too much on the Jacqueminot strain, and that he meant to return to some of the older Roses. For this purpose he had planted in a corner of his garden under cover a number of varieties for producing seed, but I am not certain whether he used artificial fecundation or whether he relied on natural causes; nothing came of it, and he has not sent out a good Rose since. Indeed the effects of artificial hybridising are oftentimes disappointing. I have known it tried with Verbenas, where little success attended, and where all the efforts of the grower were distanced by a chance seedling that came up in a walk; and when such grand Roses as Marie Baumann, Gloire de Dijon, Maréchal Niel, and others are the results of chance hybridising it may well be asked, Can you better these? Perhaps not in their peculiar line; but that there are desiderata not yet obtained amongst Roses few are likely to question. A yellow Hybrid Perpetual is wanted, and also a dark crimson Tea. Moreover, many of the so-called Hybrid Perpetuals do not deserve the name. They give a quantity of bloom in the summer, and some send out flowering shoots from whence blooms may be obtained in autumn; but many never bloom a second time, while all of them send out flowerless shoots. What a Hybrid Perpetual ought to be is a Rose that, like the Tea Rose, is ever blooming and never producing a shoot that has not a flower bud; and a white H.P. the size and form of Charles Lefebvre or Marie Baumann would be hailed as a very Koh-i-noor amongst Roses.

It was, then, to attain these objects that Mr. Bennett set himself. He knew the fickle nature of our English climate, and

how difficult it is to obtain in some seasons good healthy seed; so the mother plants he determined should be grown in pots and placed in the house when the time of Roses came on. The varieties he selected as seed-bearing plants were chiefly Alba Rosea and President, and with these he crossed various Hybrid Perpetuals. I saw one plant of Alba Rosea, of which every flower had been crossed and each stem labelled with the variety employed to fertilise it, and every pip was full of good seed. These plants had been prepared for some time before they were used for seed. Thus every care has been taken to effect the desired end.

The soil on which Mr. Bennett grows his Roses, and where we were to look for the result of his experiment, is simply an open field of indifferent chalky soil—soil that will not grow Wheat, and only fairly Barley. The stock that he uses is the seedling Briar, and on this he grows not only his own seedlings but a large collection of named sorts. As might be expected, the flowers are not, any of them, such as we might see on the Rose soils of Hertfordshire or Essex.

And now what has Mr. Bennett done? Has he obtained a yellow Perpetual? No; nor do I think as yet he is likely to do so. He had at the time I was there two on which he relied with hope. One was a seedling from Mabel Morrison crossed with Maréchal Niel, another Mabel Morrison crossed with Canari. These were not in flower: the buds were showing a little yellow tinge outside which looked promising, but I have since heard from him that neither of them has come yellow, although the latter has developed into a grand Rose. Mr. Bennett says, should this be the case that neither of them show signs of being yellow, it will be useless to persevere with Mabel Morrison as a seed plant for yellows, and I think it more likely to obtain a good yellow from a pink H.P. or even a darker Rose. Hence it may be concluded that a yellow Hybrid Perpetual is still in the future.

Has he succeeded in obtaining a really crimson Tea? To this I say Yes, for that Duke of Connaught is such there can be no doubt. I do not agree with the too sanguine anticipation that "this will probably prove to be the finest crimson Rose in any section." It is not that, but it is a crimson Tea; its foliage is that of a Tea Rose, the bud is lengthened as in that class, and not a shoot even on the smallest plant but bears a flower. So much is this the case, and so continuous is the flowering, that a florist at Tottenham has purchased all that Mr. Bennett can supply for the purpose of cutting crimson Roses during the winter months. This Rose was in the hep on Christmas, 1877, so that as it has been increased by the thousand, it may well be imagined that it has not had much time to develop large flowers. It is a seedling from President crossed with Louis Van Houtte. Michael Saunders is another fine Rose, a seedling from President and M. Victor Verdier, with most decided Tea blood in it. It is large, of good form, colour a curious shade of pink, and with a most decided Tea perfume. This is the most likely Rose I saw to please exhibitors generally. Viscountess Falmouth, a cross between President and Moss Soupert et Notting, is a very extraordinary plant, and the flower is distinct in its colouring, delicate pink, the back of the petals darker, and very sweet scented. Beauty of Stapleford, a cross between Alba Rosea and Comtesse d'Oxford, has large flowers of good shape; outer petals pinkish rose, shading to a deep rose centre.

And now as to the question which has been asked me so often, and which, if I did not anticipate it, would be asked again after reading these notes, Are they good exhibition Roses? and has Mr. Bennett succeeded in his proposed attempt? The first question I do not feel quite entitled to answer. Those that I saw in bloom—Michael Saunders, Viscountess Falmouth, and Beauty of Stapleford, I imagine would, in a good Rose soil and after they have had a little fair play, prove good show Roses. I have always deprecated the notion of forming a decided opinion on new French Roses the first season, for this very reason—they get so backed and cut about and put through such unnatural courses that it is impossible to judge of them; and I say the same here. I think Mr. Bennett has made two mistakes. He sent out too many at once. We all know how few amongst the sixty or seventy Roses sent out by French nurserymen every year turn out worth keeping, even although they come from a dozen different raisers. We rarely retain above three or four of them in our gardens; and however good the Stapleford Roses may be, there is at once a doubt on the rosarian's mind—"All cannot surely be good; and if not, which am I to have?" I think it most likely that some of these will take their place on the exhibition table, as there is

a novelty of colouring in them which will form a good contrast to many kinds we already have. I am also certain that Mr. Bennett is on the right track. He was, I think, in too great a hurry to bring his Roses out. He would have given them a better chance had he waited another season, but I am sure such an intelligent method of procedure must produce good results. I have already mentioned a Rose which he hoped would come yellow, a cross between Mabel Morrison and Canari. He has been disappointed in its colour, but I have a letter from him in which he says that it is a most extraordinary flower and is most enthusiastic in its praises. He describes it as "exactly in the way of Baronne de Rothschild, much larger and much fuller, and quite distinct; a brighter salmon pink without the least shading. Of the thousands that have bloomed here not one has at all come near this one. I have sent a messenger to London to try and get a faithful drawing taken of it."

Such, then, are my views about these Roses. I am quite sure that they are a very interesting addition to our Roses, and that no lover of the flower will regret adding some of them at least to their gardens; and I think, too, that all rosarians will wish Mr. Bennett success in his painstaking endeavour to impart novelty to our Rose lists. We seem in some classes to have reached a point beyond which it is hopeless to try to go; but there are others, and those on which Mr. Bennett is at work, which will reward him and add fresh enjoyment to the lovers of the queen of flowers.—D., Deal.

### GRAPES WITHOUT FIRE HEAT.

IN the report of the Glamorganshire Show it is stated that Mr. J. Muir was awarded the second prize for Black Hamburg Grapes "ripened without fire heat." The sentence quoted appears to me to require a little explanation. I have seen houses of Black Hamburg Grapes in the south of London this year in some of which the utmost advantage has been taken of sun heat when there has been any, and yet the Grapes are only just commencing to colour, and will not ripen unless we have five or six weeks of uninterrupted sunny weather. The vineries to which I refer have no heating apparatus connected with them. The non-ripening of the Grapes is causing disappointment, which has not been lessened by the record of Mr. Muir's success. It appears to me important to know if the Vines at Margam Park which have produced ripe Grapes without fire heat in the autumn, were started with the aid of fire heat in the spring. If this was not the case Mr. Muir must either have a very early variety of the Black Hamburg, or the climate of Glamorganshire is especially salubrious and far exceeding that of most districts of the country. Black Hamburg Grapes can be ripened "without fire heat" in ordinary seasons, but the instance referred to is the only one which I have noticed of their having ripened wholly with the aid of sun heat this year.—A. C. M.

### DESFONTAINIA SPINOSA.

THE beauty of this evergreen *Chilina* shrub when in flower is so great as to induce a feeling of regret that any misconception of its real value as a decorative plant should exist. Twenty-four years ago it had been planted out in an open border at Exeter, and proved very free-flowering and quite hardy. Two years ago, at this season of the year, I saw numerous groups and single specimens of it thoroughly established in the gardens of Devonshire and Cornwall, all of them thickly clothed with deep green, glossy, Holly-like foliage, and with many of the tubular pendant flowers still in the full brilliancy of their mingled colours of scarlet and yellow, to which the foliage forms such an admirable foil. In height they ranged from a yard to 5 feet with a somewhat formal and erect habit of growth, which rendered them more pleasing to the eye in groups than when planted singly. Very lately I saw a small plant that had been growing in the open garden at Buxted Park for some years and is quite hardy. This has the ordinary rigid growth, but in the garden at Brambletye there is one well established in a border that has long shoots branched and spreading, and foliage more sparsely set with marginal spines than the ordinary type. Other plants of it at Brambletye have developed individual peculiarities. All of them, however, passed unscathed through the severities of last winter, which, I think, affords conclusive proof that we have here not a mere greenhouse shrub as was erroneously supposed,

but an addition to our collection of choice hardy shrubs that will much enhance the beauty of mixed groups, as well as afford us a distinct and novel feature when grouped alone, in the southern counties at any rate. Mr. Jenks informs me that its flowers emit a peculiar and agreeable perfume, of which important property I had not hitherto been aware, and am desirous of learning if it has been commonly observed, or is peculiar to the Brambletye specimens alone.—E. LUCKHURST.

### COTTAGE HORTICULTURAL SOCIETIES.

#### YARDLEY WOOD SHOW.

SOME months back an interesting correspondence was carried on in your Journal, the subject being "Cottagers' Horticultural Societies." A certain "YORKSHIRE CURATE" gave your readers the pessimists' view on the subject. From that moment I determined to establish such a society here, and hope that you will allow me space to report upon our first Exhibition which was held on September 8th. I enclose you our schedule of prizes and rules of the Society.

I quite agree with the "YORKSHIRE CURATE" that there is much trouble and annoyance to be experienced by those who have to start and manage these exhibitions, but surely the result repays us all such trouble a thousand times. The social and moral character of one's parish is marvellously improved in spite of the east wind blown by the very few really disappointed exhibitors. But I must at once come to results. This is a small country parish without gentry, seven hundred inhabitants, yet we had a subscription list of about £18; several friends outside the parish of course helping. We voted about £15 for prizes, and advertised freely. I wrote letters to friends, amateurs and nurserymen. Mr. Charles Turner, Messrs. Cranston, and Messrs. Perkins of Coventry, at once supported me and promised to send Roses for exhibition. Local nurserymen with but two exceptions sent glorious collections of foliage plants and flowers. Local amateurs poured into our two tents grand specimen plants of all sorts, with such fruits as Pines, Peaches, Nectarines, and Grapes. We had a fine day and took nearly £8 at the gate, so we find ourselves with a good round sum in hand in case of a rainy day next year.

But I must say a word about the Show. Everybody was more than satisfied. The Roses were very good considering all things. Messrs. Perkins staged some wonderfully fresh and large blooms: perhaps the best were Alfred Colomb, Leopold I., Lælia, Sophie Coquerelle, Annie Wood (marvellously fine) and Marguerite Brasseur (or Charles Lefebvre?); even Mr. Perkins was not sure which it really was. Mr. Charles Turner's and Messrs. Cranston's were not so fresh as Messrs. Perkins', for they had been out the previous day, quite twenty-four hours before the Show was open. However, all were much admired, and many of the cottagers declared that they had never seen "real" Roses before. Let my brothers in the cloth take heart when they read that the first nurserymen in England will take the trouble to send boxes of Roses a hundred miles in order to encourage cottage horticulture. I may add, too, that Messrs. R. Smith & Co. of Worcester gave a prize of six Rose trees (to be delivered in November) to that cottager who staged the best six distinct Roses, and Mr. Perkins one of the Judges told me that the prize was well earned. Mr. R. H. Vertegans, F.R.H.S., of The Chad Valley Nurseries, Edgbaston, exhibited splendid specimens of *Seafortia elegans*, *Areca lutescens*, *Cocos Weddelliana*, *Curculigo recurvata variegata*, also some very fine plants of *Lilium auratum*, *lancifolium album*, and *lancifolium speciosum*. Perhaps their best exhibit was a very healthy specimen plant of the favourite *Ailamanda Hendersoni*. Mr. Hewitt of the Solihull Nurseries also sent a splendid collection of plants, including among many others *Hydrangea paniculata grandiflora*, *Pancreatum fragrans*, a good collection of *Pelargoniums*, *Caladiums*, and *Palms*. All were arranged with consummate taste. I will only say now that we had a financial as well as horticultural success, and I verily believe that pluck and perseverance has beaten the bad season, and that we have soundly established the Yardley Wood Cottagers' Horticultural Society.—J. A. W.

#### CARDIFF.

THE Directors of the Cardiff Workmen's Cottage Company (Limited), who have built upwards of three hundred artisans' dwellings at Cardiff, have been holding a flower show on a somewhat novel principle. It so happens that the Company's property is in one block of a dozen short streets, and not intermixed with other premises, and as a large number of the tenants cultivate window plants it was suggested by the Secretary, and cordially approved by the Directors, that the distribution of a few prizes to the best examples would be a great encouragement to the promotion of so laudable a taste in the future. It was considered best to make the awards on the plants as they stood in their places in the windows, so saving all trouble in removal, and bringing into play the taste of the competitors in the artistic arrangement as well as in the quality of the plants. The duties of Judge were undertaken at the request of the Directors by Mr. Pettigrew, head gardener to the Marquis of Bute, who is Chairman of the



Company, and on whose land the houses are built. The competition being open to all the tenants, and entrance fees not being asked for, the number of exhibitors was large, amounting to 146; and although some could count only as indications of good intentions for the future, the great proportion of really good examples were quite worthy the exercise of the well-known skill and experience of the Judge in making the awards. The prize fund was contributed by the Directors and the builders and contractors concerned in the erection of the cottages.

Among so many excellent examples it would be difficult to note individual excellencies, but a few remarks from the Judge may be useful as a guide for the future. Mr. Pettigrew says, "He was surprised to find so many good examples of window gardening in a district so lately formed as the cottages, and he considers the action of the Directors in originating a show of this kind as a step in the right direction and deserving of cordial support. It will be the means of developing amongst those workmen a taste for window gardening and a love of flowers, the cultivation of which affords so much enjoyment, and tends in a great measure to counteract the evil effects of the public house." In conclusion, Mr. Pettigrew said he met with much difficulty in judging so many streets for the first prize, and suggested that in future a first, second, and third prize might be given to each street.

#### TELEGRAPH AND TELEPHONE PEAS.

HAD Mr. Keetley (page 190) confined his remarks to the Peas that he had grown he would have had some sort of a case against me, but he has done precisely what he reproaches me for doing. I referred to Peas grown by Mr. Iggulden, Mr. Keetley refers to Peas grown by Mr. Cooling and "several others" whom he does not even name. It is a little amusing to be told that had I grown the Peas in the Orsett Hall Gardens for myself I should have found the two varieties mixed. That is a compliment to Mr. Iggulden for growing them so true, to which he is quite welcome so far as I am concerned. I assisted to gather the Peas, to shell them, and to eat them. The rows were examined most carefully, and I am able to say the varieties were not mixed, and if Mr. Keetley asserts the contrary I am obliged to tell him that, not having seen the rows I referred to, he is not competent to judge on the matter. If he will again refer to my article on page 123 he will find that I specially restricted myself to the Peas grown at Orsett, and I have not a word to retract. I am glad to say that my eyes are sufficiently good to detect green from white pods and Peas, and smooth from wrinkled, and I think my palate is sufficiently sensitive to perceive the difference between Peas that are mealy and Peas that are buttery. So distinct were the two Peas at Orsett that I am certain that no unprejudiced person could have pretended that they were identical. I have nothing to do with Mr. Iggulden's opinions, Messrs. Carters' action, nor Mr. Culverwell's oversight. I simply recorded what I saw and tasted, and never thought of causing either pleasure or pain to individuals, least of all to Mr. Keetley, who for some reason appears to be more discomposed even than Mr. Culverwell; in fact I simply told about the Peas at Orsett what Mr. Keetley cannot possibly controvert, the—TRUTH.

ALTHOUGH the remarks of Mr. Keetley at page 190 are directed to "TRUTH" it is very evident they apply to all those who have written about the distinctness of Telephone Pea in this Journal, and as one of them I must inform Mr. Keetley that his teachings may be accurate so far as his own crops and those he has seen are concerned, but he is wrong in trying to make out that the character he imputes to Telephone is its correct one in all cases. I readily admit that he may have found some of the pods "light green" and others "dark green," and I would like to know on which variety of Pea this cannot be observed; but no person would think of making this a leading point to judge the distinctness of the Pea by, as it is well known that the light green or dark green in the pods are often only indications of age. All Pea pods when they become slightly old assume a light colour, while the younger ones on the same stem remain dark green. I never saw a Pea or its differences more fully and accurately described than Telephone was by "TRUTH," and so far as my experience and observation of it in the garden here goes I entirely coincide with him.—J. MUIR, *Margam*.

GLOIRE DE NANCY BEGONIA.—Referring to the remarks about this variety in the *Journal of Horticulture*, August 21st, page 145, I quite agree with Mr. Wm. Potten that it is one of the most useful varieties we have. I would like to have your

opinion of the enclosed flower, which has been taken off a small plant only 6 inches high and at present quite covered with bloom, each flower being perfectly double and fully 3 inches in diameter. The one I send having been too long on the plant is now, as you will see, rather old.—O. G. ROBERTS.

[It is the finest flower we have ever seen, and resembles a Turban Ranunculus.—EDS.]

#### BITTON VICARAGE.

BITTON is a very pleasantly situated village about midway between Bath and Bristol, and as it lies in a valley through which the river Avon flows evidences of luxuriant growth in both pastures and foliage are seen all around it. The trees are fine; and this year, while it has been bad for most things, has been exceptionally good for foliage, the constant moisture suiting them, while the bitter east winds were over before the young leaves burst forth, and I do not remember ever seeing a greater wealth of foliage than there is at present. A situation like this is peculiarly susceptible to frosts; and although, generally speaking, the Bath district is mild and genial, yet in the last winter it (so trying everywhere) fell with peculiar severity on the west of England, and hence very lamentable gaps have been made in the choice collection of herbaceous plants and shrubs for which the vicarage garden of Bitton is so famous. As we went round the garden it was with many a sigh of regret that Mr. Ellacombe pointed out here a wall completely denuded of its creepers, here a gap made by a choice shrub having been killed, in another place a plant that had been cut down struggling up again into life, in another place a label, which was all that remained where a plant ought to have been, and to such a lover of the hardy garden as Mr. Ellacombe this is no slight trial. Many of the plants have a history; have been collected on some pleasant tour, and bring to memory some lovely spot in Alpine scenery or the mountain districts of our own land; others have been the gifts of friends of whom some are in the "Land o' the leal," and so the losses are more than their mere intrinsic worth. The garden is one which would in no way strike the ordinary visitor. You see no grand blaze of colour, no polychromes or carpet bedding which are the special pride and glory of many a vicarage. There is no attempt at method—any spot that is most suitable for any particular plant is seized upon; and hence all primness, and, indeed, if one must say it, neatness, is taken away. To some people indeed such a garden is an abomination. A near neighbour of mine took the duty of a brother parson who is famed for his herbaceous plants. Of course as my friend had a large garden of his own I imagined he would have been delighted, and with a touch of envy almost I asked him, "Well, what did you think of Blank's garden?" His reply was, "*Referens horresco*. Never saw such an untidy place in my life; and there seemed to me to be nothing but rubbish in it." With what different eyes one sees things!

Although probably the earlier months of the year are those in which the garden of a lover of herbaceous plants is best worth seeing, yet go when you will there is always sure to be something noticeable, something, too, which always adds variety to the nosegay—a most desirable point when we see the greater portion of these in friends' houses made up of Pelargoniums and Calceolarias. Among those plants suitable for this purpose, and at the same time graceful and elegant in the garden, I noticed *Anthericum graminifolium*, a late-flowering species having long spikes of small white flowers. *Montbretia Pottii* was pretty enough (I saw it since at Mr. Ware's), an Iridaceous plant nearly allied to *Tritonia*, but I do not think so pretty. The flowers are small as compared with the size of the plant, and only two or three of them open at a time. It seems to be a somewhat over-rated plant. Conspicuous by a grand spike of bloom was *Yucca Ellacombei*; it was a grand pyramid of bloom, the outside of the petals being tinted with reddish crimson. It was (so Mr. Ellacombe stated to me) seen in the garden there many years ago, nothing being known of its history, and so named by a late distinguished botanist. It would seem to be a variety of *Yucca superba*, a grand pyramid of which is now in bloom in the garden of the vicarage at Ashford in Kent. *Lythrum alatum* and *roseum* are handsome plants with long spikes of flower. Curiously enough the individual flowers open at the top first, and then gradually going down the stem; the seed pods following, and their shape produces the appearance of a spike of flowers with the upper part in bud. *Dracocephalum Ruyschianum*, with its long spike of blue

flowers, was also a conspicuous object. *Eulalia japonica variegata* is a very beautiful Grass, perfectly hardy and very striking; while *Eulalia zebrina* has the variegation disposed in bands across the leaf instead of longitudinally. *Enothera speciosa* was in fine bloom, and is certainly one of the most beautiful of the species; the flowers are of a delicate paper white, suggesting at a distance a *Meconopsis*. It is, like its congener, sweet scented and free flowering; while, as it is only 2 feet high, it has not the rampant character of many of them. *Fuchsia procumbens* has proved perfectly hardy here, and with its curious little neat orange and blue flowers is well worth a place on any rockwork where it can be allowed to creep along the ground and not smothered by larger plants; while the sweet little *Anometheca cruenta*, a little bright flower, not so often seen as it ought to be, was perfectly at home in many parts of the garden. Many Lilies were doing grandly, although neither *auratum* nor *candidum* was quite happy; but *L. dalmaticum* Catani had upwards of forty of its blackish-purple flowers. *L. Maximowiczii*, rich citron spotted with black was fine. *L. Batemanniae* was also very pretty, and is one of the best additions to our Lilies that we have lately had. The colour is a peculiar shade of apricot without any spots, apparently very vigorous. *L. pardalinum* and *L. californicum* were also in very good condition; and what more striking plants can there be in a flower garden than these stately and beautiful Lilies? There had been a fine bloom of some of the different varieties of Iris, and Iris Kämpferi had done very well. I have not yet been able to grow these in my garden, but must try again, for they are very ornamental. *Adenophora suaveolens* was very pretty and sweet with its blue Campanula-like flowers. *Delphinium Batesonae* is a very fine dazzling blue Larkspur, dwarfish in habit with branching spikes. I do not recollect seeing this before, and it is certainly worthy of a place in any garden where herbaceous plants are grown. Another fragrant flower was the sweet-scented Vine which was growing up the stem of an Acacia. *Crinum capense* had stood the winter well. *Cypripedium spectabile* had been very fine, but was of course now over. Amongst Phloxes, *P. Van Houttei* was very beautiful and is a very fine herbaceous plant. Amongst the Sedums I specially noticed were *speciosum* and *pulchellum*. Of course there were varieties of Phlox, Dianthus, and in spring the garden had been gay with numerous choice bulbs; and probably there is no class of plants more ornamental than that of hardy bulbs. They begin early in the season with the Cyclamen, continue on throughout the summer and late into the autumn.

There was a charming little white Rose called "Little Pet," which Mr. Ellacombe said he had obtained from Mr. Pilgrim of Cheltenham, that was very pretty and fragrant. Very beautiful, too, is *Rosa rugosa*, and its white variety *rugosa alba*, with large single flowers and enormous heaps of a peculiar shape, making it very ornamental in the autumn months, as I saw it again at Mr. Ware's the other day in great vigour.

Besides the herbaceous plants Mr. Ellacombe has a choice collection of flowering shrubs, but it was too late for these. He spoke highly of *Fremontia californica* and *Raphiolepis ovata*, but was not particularly enamoured of the new American *Hydrangea Thomas Hogg*. There is assuredly in this class of plants for those who have space a fine choice wherewith to ornament their shrubberies. We have been so much in the habit of running upon evergreens that flowering shrubs have been to a great extent neglected; but there is a turn in the tide, and the many beautiful things that there are amongst them are being rapidly sought after. Their deciduous character is in our climate of late spring frosts rather in their favour, for they escape the severe cutting-up to which evergreens are exposed; and while after such a winter as the last, when the *Laurustinus* presented a miserable browned appearance instead of its snowy whiteness, the deciduous shrubs retarded by the long winter came out in great beauty.

I have thus endeavoured to show what a wealth of beauty there is in this delightful vicarage garden. Unfortunately my visit was a too rapid one, or I should have been enabled to take further notes of its contents, but I hope I have said enough to show that it is well worth a visit, and I think I can answer for its enthusiastic owner that he will be most glad to show its treasures to anyone who appreciates his pets and is not on the look-out for the last new thing in bedding-out. This they will not find there, but to all who love not only our old-fashioned border flowers but also all the more recent introductions amongst hardy plants, Bitton Vicarage garden

has been for a long series of years, and we hope may yet continue to be, classic ground.—DELTA.

## ONIONS IN 1879.

AMONGST gardeners and garden holders generally the Onion crop is always considered an important one, and although this is undoubtedly the case it appears that it is even of more consequence than many are aware of. The Right Hon. W. E. Gladstone, speaking the other day on gardening to the cottagers of the Hawarden Horticultural Society, stated, amongst other interesting facts of the kind, that £414,000 worth of Onions was imported into this country annually. Whether it would not be well for farmers and others complaining of bad crops to devote more land to the cultivation of this crop, and thereby produce a commodity for which there is so much demand, is a matter worthy of consideration. No crop is more easily grown than the Onion, and none is more certain to become useable or saleable. In seasons like the present, when many crops both in garden and field fail to become of the most ordinary value, Onions are the very opposite, as the weight of a light crop of small bulbs is equal in value to a corresponding weight of large bulbs.

In many instances the crop is lighter this season than it has been for some years. Last year we had several bulbs larger than they are this year, but yet the crop is good, the bulbs averaging from 10 to 12 inches in circumference. The seed was sown in well-manured ground on the 10th of March. Celery was the preceding crop. The soil is so retentive that for hours after a heavy shower or a wet day the water may be seen standing on the surface in pools. It is so bad in this respect that when the seed was sown I had grave doubts about ever seeing the young plants should the season turn out bad, and although it has certainly been the case they have succeeded much better than I expected.

Our main piece of Onions is on a quarter of ground measuring 30 yards by 12; 2 lbs. of salt was sprinkled on this just before the seed was sown and hoed in. No beds were formed, the rows following each other 15 inches apart. The seed was covered over with a mixture of old potting-shed soil, soot, and wood ashes. When the young plants were about 2 inches high other 2 lbs. of salt was thrown over them, and this was repeated some weeks after, the object being to keep off the grub, which it thoroughly succeeded in doing. Apart from this, running the hoe between the rows once or twice is all the attention they received. Many of them have just (Sept. 2nd) been drawn up and laid down to dry. All will be stored in a dry shed by the middle of this month. Those with the thickest necks will be put by themselves to be used first. The very smallest will also be kept separate, as very often they keep as long or longer in sound condition than the larger bulbs. Some varieties keep better than others. James's Keeping is still one of the best in this respect; but to make these notes more convenient I had better put the names of those we have grown here this season with their characters in the following order:—

*Webb's Banbury*.—I mention this first because in my opinion it is the most handsome of all. It forms bulbs quickly, and has a wonderful tendency to remain small in the neck, and as the bulbs are very flat they become handsome in shape. It keeps very well, and is altogether a most useful variety.

*Sutton's Reading*.—This resembles the former in a great measure, but is slightly more conical. With us the bulbs come very even in size and form, and for a main crop we consider it second to none.

*Carter's Naseby Mammoth*.—This is more like the Banbury than the last-named, being low in the crown, a great percentage coming with small necks, and the whole forming a very even pretty crop. I consider it is the best form of the White Spanish in cultivation.

*James's Keeping*.—I mention this next owing to its keeping qualities being so superior. In this respect it is the best variety we possess; and wherever sound Onions are wanted, say until the following May or June, this variety should be grown. The four named above are superior to any of the following:—

*Sharpe's White Spanish*.—This is much after the style of Naseby Mammoth, but in size, shape, and general character it cannot be compared to that variety.

*Williams' Magnum Bonum*.—This is quite a different type from any of the preceding, as it is dark in colour and of a long conical or Pear shape. The necks are mostly inclined to be thick, and the bulbs of large size. In this respect it much resembles

*Barr's Oporto*, which is of the same shape only more erect in growth and not so dark in the skin. At the present time it looks more like a last-autumn-sown Tripoli than anything else, and although it has not been tried here for that purpose we fancy it would be as suitable for sowing in autumn as spring.

*Trebons*.—In shape and style of growth this resembles the last-named, but it is a more clear plate yellow in colour. The bulbs become very large in size, and in good summers they have been grown 1 lb. in weight in this neighbourhood.

*Bedfordshire Champion*.—Not many years ago this was grown for a main crop in many places, but I think it is now quite superseded by several of those first named.—A KITCHEN GARDENER.

### ROSES FOR TOWNS.

A STORY is told of a man who assured a friend that he was very musical indeed. "What instrument do you play?" was the natural question put; to which he replied, "None at all, but my brother plays the German flute." On the above principle I may say I know something of smoky gardens and Rose-growing near towns, for my brother lives in one of the most smoky districts of the West Riding. This is my old home, and still has most of the old attractions, so that I often visit it and when there spend much time in the garden. My brother has a large rosery as well as a span-roofed house to grow Teas in. His experience with regard to one Rose, *Général Jacqueminot*, is totally different from "BICEPS's," who says that the old *Jineral*, as they call him in Yorkshire, is useless for growing near towns, and he invites opinions from others on this point. No Rose does better with my brother than this grand old Rose. He grows it in all sorts of ways—on its own roots, on the *Manetti*, and on the standard, and perhaps it does better on its own roots than on any stock. With regard to John Hopper, my experience is opposed to "BICEPS's." The foliage is generally cleaner and the buds less attached than more thorny varieties generally are. As I do not know where "BICEPS" lives, as he gives no intimation of his county in his letter. I cannot well advise about *Gloire de Dijon*; but in the West Riding and at my brother's all Teas, including *Gloire de Dijon*, refuse to grow.

With regard to duplicate Roses a few words from me are, I think, required in answer to "A. P.'s" concluding paragraph on page 167. "A. P." is kind enough to censure me as follows—"I should not have taken up my pen were it not for 'WYLD SAVAGE's' remarks relative to Sultan of Zanzibar. I think such a rosarian as Mr. Paul (who sends out both Roses) would be likely to know whether those he was sending into commerce were dissimilar or not; and seeing what beautiful Roses he has from time to time presented us with, I think we ought to be careful in our remarks respecting them." In answer I would ask "A. P." first to look at my article again and see if I was not more than careful in the way I spoke of the two Roses. I qualified my remarks by saying that my observations were taken from one nursery alone, that the proprietor of it was a little in doubt whether he had got the right Sultan, but that he could see no difference in his own plants, although visitors had brought blooms to the nursery quite different from those of the Sultan he had bloomed.

So much as to the caution and care I used in the wording of my letter. With regard to the good taste of writing anything concerning Roses sent out by Mr. George Paul, I may say that the Rose is the flower upon which I am more particularly engaged, and that I endeavour to give your readers any novel or interesting information that I am able. With this object I spent many days at the only large Rose nursery within forty miles of my home, therefore the article on duplicate Roses was the result of much labour and care. No more interesting subject which is not worn threadbare on the subject of Roses presented itself to my mind, and if I may judge by the number of answers I have had I am not alone in my opinion. If it is any comfort to "A. P." I may tell him that Mr. George Paul is not offended at my article, and that so far from resenting it as an impertinence he has written a long letter and sent me blooms of the two Roses, only anxious, as he says, to "assure so good a judge as myself of their distinctness."—WYLD SAVAGE.

**PAINTED LADIES AND SILVER Y'S.**—It was remarked long since by the old entomologists that in a year when Lepidoptera generally are scarce a few species appear in special prominence, and the butterfly and the moth of 1879 seem to be the Painted

Lady (*Vanessa Cardui*) and the Silver Y (*Plusia Gamma*). The former of these does not concern the horticulturist except as an ornament of the parterre, for the caterpillar feeds on Thistles; the latter, however, is likely to prove a source of annoyance hereafter. Although the caterpillar of *P. Gamma* feeds on a variety of plants in the open country, the moth enters gardens freely, flying by day over the flowers, and in such seasons as the present many of the females will deposit their eggs both in the flower and the kitchen garden. I have just received a young brood that were feeding upon the *Chrysanthemum*. Leaves should be examined for their patches of eggs.—J. R. S. C.

### NOTES AND GLEANINGS.

THE annual report of the PELARGONIUM SOCIETY just issued shows that the Society is in a prosperous state. Each year since the Society was formed in 1875 the amounts offered in prizes have steadily increased, the increase of 1878-1879 being particularly marked, and the balances in favour of the Society have also increased—namely, from £20 8s. 4d. in 1875 to £70 15s. 8d. in the present year. The Society's income this year was £121 15s. and the expenditure £114 17s. 5d., leaving the balance above named. The report shows with great clearness the position of the Society, and will be submitted for adoption at the annual meeting of the Society, which is announced to be held at Chiswick on the 23rd inst., when officers for 1880 will be appointed and the Pelargoniums grown in the gardens will be inspected. Although the report is generally so satisfactory, it contains a regret "that a larger proportion of the members who are growers do not compete with spirit at the exhibitions, and that a considerable number of Pelargonium growers residing at a distance do not as yet see the advantage of supporting the Society, and thus encouraging the advancement of the flower in its several forms."

— WE have received the schedule of prizes for the seventeenth Exhibition of CHRYSANTHEMUMS AND FRUIT, announced to be held in St. George's Hall, Liverpool, on November 18th and 19th. All the prizes for Chrysanthemums are open to all exhibitors, and there are prizes also for plants and fruit. Mr. R. Wilson Ker, 6, Bassett Street, Church Street, Liverpool, is the Honorary Secretary.

— THE members of the SHEFFIELD GARDENERS' ASSOCIATION with their friends to the number of about 350 went on the 2nd inst. by excursion train to Crosswell station for Welbeck, the seat of the Duke of Portland, who had given permission for the party to be shown through his establishment. They were conducted by Mr. Carr, the head gardener, through the immense ranges of vineries, fruit houses, plant stores, &c., and from thence to the Abbey and over the terraces, shrubberies, and pleasure grounds. The series of underground tunnels, with the lakes, skating rinks, grottoes, &c., which have all been constructed by the present Duke, proved great sources of attraction to the visitors, who spent altogether a most enjoyable day, and were highly gratified with the kind and courteous reception they met with at the hands of the authorities at Welbeck.

— IT is not usual to find PRIMULAS flowering at this season of the year, but Messrs. James Carter & Co. have sent us blooms of their new Fern-leaved variety Prince of Wales. The flowers are fringed, semi-double, and of a rich rosy crimson colour—distinct and attractive.

— WE understand that the fine BLACK HAMBURG GRAPES exhibited by Mr. J. Witherspoon at Bishop Auckland on the 13th ult., after being kept in water were again exhibited at Lumley on the 25th, Durham the 26th, and North Shields on the 27th, and each time took first prize in good competition. The Fruit Show at Durham was, we are informed, the best of its kind that has been held in the north this year.

— THE mode of UTILISING GREEN GRAPES practised by Mr. Wildsmith, gardener to Lord Eversley, Heckfield Place, deserves to be widely known. The berries are placed with a little water in an oven where a suitable temperature is maintained, and afterwards strained. The juice is boiled down with sugar, and forms a fine red transparent jelly of excellent flavour, as we can testify, having tasted some at the last meeting of the Royal Horticultural Society.

— MR. R. ROBBINS, gardener to Sir E. A. H. Lechmere, Bart., M.P., Rhydd Court, Upton-on-Severn, informs us that he sent a TRENTHAM HYBRID MELON to table on September 3rd. On cutting it open the seeds were found to have germinated

and produced small plants with roots and seed leaves quite expanded. The Melon was of excellent flavour and of medium size. Two of these small plants were enclosed, and their cotyledons were quite green.

— **SEPTEMBER**, writes Mr. William Taylor from Longleat, has made its appearance with both frost and sunshine. We have now had several days of most beautiful bright weather, but the nights are very cold; the minimum temperature at 4 feet from the ground for the 1st, 2nd, 3rd, and 4th were respectively  $35\frac{1}{2}^{\circ}$ ,  $37^{\circ}$ ,  $37^{\circ}$ , and  $42^{\circ}$ . Thermometer, when on the grass on the morning of the 1st, when the temperature was the lowest and the grass was quite stiff in places as late as 7.30 A.M.; on the 2nd, 3rd, and 4th the temperature registered on the grass was  $32^{\circ}$ ,  $31^{\circ}$ , and  $36\frac{1}{2}^{\circ}$ . The maximum in the shade for the four days has been  $70^{\circ}$ ,  $72^{\circ}$ ,  $71\frac{1}{2}^{\circ}$ , and  $70\frac{1}{2}^{\circ}$ . The walls have been warmed by the sun, but it is a bad look-out for late fruit on standard trees.

— **MR. IGGULDEN** informs us that **SUTTONS' MAGNUM BONUM POTATO** is one of the very few varieties that has resisted the disease. Some varieties have been so seriously affected that the crops are nearly worthless, but of *Magnum Bonum* not a tuber is touched. A new round variety of the same habit of growth as *Magnum Bonum* obtained from Messrs. Sutton is also similarly free from the murrain, which has attacked with great virulence other varieties in the same plot of ground.

— **THE SUMMER**, now rapidly approaching its close, has not been a favourable one for the weather prophets. A hot summer was predicted because the season immediately preceding at the antipodes was exceptionally dry. That theory of the weather has proved unsound; indeed, to come nearer home the predictions issued from the London Meteorological Office, which are published daily, have been very often extremely faulty. Bearing those facts in mind there is not much encouragement for indulging in prognostications relative to the forthcoming winter; but no harm can be done in advising that preparations be made for frosts. It is not unlikely that these may be early, seeing that so little heat has been absorbed by the soil, the surface of which is exceptionally cold for the time of year, and frost is likely to occur the sooner; indeed, it has occurred. We saw lawns crisp with ice on the 1st inst., and have heard of instances where the thermometer has been from  $2^{\circ}$  to  $4^{\circ}$  below the freezing point. Slight touches of frost, even if nearly imperceptible, are often very injurious to certain plants. Cuttings of such plants as *Heliotropes*, *Coleuses*, *Alternantheras*, and others similarly tender never strike well if they have been ever so slightly injured, neither do tender plants winter well if they have been exposed to the frosts of autumn before being potted and placed in their winter quarters.

— **MR. JOHN MORGAN**, late foreman at Blenheim Palace, Woodstock, has been appointed gardener to the Princess Metchersky, Danghino, Russia; and **MR. JOHN MARSH**, succeeds Mr. Lee as gardener to Lady Aylesford, Offchurch, Bury, Leamington.

— In our report of the Crystal Palace Fruit Show Mr. D. Wilson was credited with the first prize in the class for three dishes of Nectarines, which we are informed was awarded to Mr. Bannerman, gardener to Lord Bagot, Rugeley, for a dish of very fine fruit.

— **ONE** of the most beautiful flower gardens we have seen this year is that at **HOLME LACY**, near Hereford. As is well known by readers of the Journal, Sir Henry Scudamore Stanhope is an earnest horticulturist, and takes great interest in and has an intimate knowledge of both fruit and flowers. The flower garden, which is nearly 200 yards long by about 50 wide, is bounded on three sides by fine Yew hedges, and is further sheltered by a belt of trees on the north. This shelter has probably conducted to the bright condition of the Geraniums which, although not so floriferous as usual, are yet remarkably good for the season. A great number of varieties are grown in trial beds, and the best of these only, whether they are old or new, are admitted to the flower garden. Amongst the old varieties retained are Tom Thumb, Waltham Seedling, Beaton's Indian Yellow, Silver Nosegay, and Lord Palmerston. A little more modern are Vesuvius, Fire King, and Mrs. Halibarton. The last-named is found the best of all the pinks for bedding. Many of the Chilwell varieties, such as Arthur Pearson, Mrs. Jacoby, Rev. S. Hey, Sir Henry and Lady Stanhope, and some others, are represented by splendid beds. The colours are so well arranged, and show to such great ad-

vantage as surrounded by the fine Yew hedges, that there is no wonder that hundreds of visitors flock to enjoy the garden on the days kindly set apart by the owner to enable them to do so.

— **MR. JESSE ALLGROVE**, for over fifty years a faithful servant to Messrs. Osborn & Sons, died on the 17th ult. at the Sunbury Nursery in his 80th year. He was for many years manager of the nursery, and in this capacity gained the esteem and respect of his employers and all who knew him.

#### PORTRAITS OF NEW AND NOTABLE PLANTS.

**ASTER TOWNSENDII.** *Nat. ord.*, Compositae.—"It is remarkable that so beautiful a plant should have escaped the notice of the many excellent botanists and zealous collectors that have explored the Rocky Mountains of Colorado, and that it should find no place in the synopsis of that Flora published in 1874 by Messrs. Porter and Coniter. It was raised from seeds presented in 1877 to the Royal Gardens by Richard B. Townshend, Esq., a gentleman who has resided in Colorado, and to whom the Gardens are indebted for other valuable contributions from that interesting country. The seeds vegetated freely, and the plant flowered profusely in September, 1878."—(*Bot. Mag.*, t. 6430.)

**CALCEOLARIA DEFLEXA.** *Nat. ord.*, Scrophulariaceae. Native of Peru.—"C. deflexa was introduced into cultivation by Messrs. Rodger M'Clelland and Co. of Newry."—(*Ibid.*, t. 6431.)

**CYPRIPEDIUM LAWRENCEANUM.** *Nat. ord.*, Orchidaceae.—"C. Lawrenceanum is one of Mr. Burbidge's discoveries during his recent expedition to Borneo, in the service of the Messrs. Veitch. Mr. Burbidge states that he found it on sandstone and limestone rocks in shady forests at an elevation of 2000 feet, sometimes attaining 3 feet in height. It flowered in Messrs. Veitch's establishment in December, 1878, and was named by Dr. Reichenbach after Sir Trevor Lawrence, Bart., M.P., the possessor of a renowned collection of Orchids, which the author of the species describes as being of exceptional richness and beauty."—(*Ibid.*, t. 6432.)

**CHIONODOXA LUCILIE.** *Nat. ord.*, Liliaceae.—"It was discovered by Boissier in June, 1842, flowering amongst the melting snows of the western Tmolus, above Dozdagh, at an elevation above sea level of 7000 feet. It was introduced into cultivation by Mr. G. Maw, who has given the following account of the circumstances under which he found it:—'The specimens were obtained the first week in May, 1877, in ascending the Nymph Dagh, east of Smyrna, at elevations of from 3000 to 4500 feet. At the lower level it was out of flower, but near the summit of the mountain a great mass of it was met with in full splendour, forming one of the most sumptuous displays of floral beauty I ever beheld; a mass of blue and white resembling *Nemophila insignis* in colour, but more intense and brilliant. Close at hand were Tulips of several species, yellow *Fritillarias*, *Galanthus Elwesii*, yellow *Gageas* of several species, *Crocus*, *Colchicum bulbocodium*, *Scillas*, &c.—a perfect paradise for the bulb collector and the botanist.' Mr. Maw adds that the *Chionodoxa* has proved itself perfectly hardy in the open ground at Benthall during the late exceptionally severe winter, and that the bulbs which he brought home in 1877 have increased in size and strength."—(*Ibid.*, t. 6433.)

**CINCHONA CALISAYA VERA.** *Nat. ord.*, Rubiaceae.—"The *C. Calisaya* yields the most important bark for medicinal purposes of all the species—that known as the yellow bark: and it is also that the obtaining of which for cultivation in India was the principal object of Mr. Markham's famous journey to the border land of Bolivia and Peru in 1860. From the eastern slope of the Andes in that region Mr. Markham, assisted by his gardener Mr. Weir, brought 450 living plants of *Cinchona*, chiefly belonging to this species, to the Pacific coast, and thence to England, and the survivors to India; where, however, owing to many delays attending the transport, but few arrived in a living state. The difficulties, and indeed perils, encountered by Mr. Markham in this journey are described in his 'Travels in Peru and India,' a work containing not only a fund of varied information regarding the *Cinchona* trees, and the conditions under which they grow in the Andes and were introduced into India, but a deeply interesting account of the extinction of the Incas in Peru, and of the execrable treatment they and the Indians received under the rule of their conquerors the Spaniards. Like the two other *Cinchonas* figured in this work—namely, the variety of this mentioned above and *C. officinalis*, the *C. Calisaya* has been flowered for the first time in this country by J. E. Howard,

Esq., F.R.S., of Tottenham, in whose conservatory it forms a small tree 8 to 9 feet high, blossoming in March."—(*Ibid.*, t. 6434.)

**LAMPROCOCUS WEILBACHII.** *Nat. ord.*, Bromeliaceæ.—"It has been in cultivation a long time, but is still rare in this country. It was first described from a specimen that flowered in 1854 in the Botanic Garden at Copenhagen; and again from a plant introduced about 1860 from Brazil by Monsieur de Jonghe of Brussels. A specimen flowered lately in the Kew collection."—(*Ibid.*, t. 6435.)

### SOLLYA LINEARIS.

THE attractive little plant represented in the annexed engraving is the prettiest of the few species constituting the genus *Sollya*. Like its relatives *S. heterophylla* and *S. Drummondii* it is a native of Australia, whence it was introduced about forty years ago. In habit it is slender and scandent, with linear bright green leaves and very numerous deep blue



Fig. 24.—*Sollya linearis*.

pendulous flowers, which are succeeded by long seed pods that remain on the plant for a considerable time. The plant is easily cultivated, and when trained over a pyramidal trellis, as we recently saw a specimen in the temperate house at Kew, it is really charming. It thrives in a greenhouse temperature either in pots or planted out, and requires a soil composed of loam and peat with an admixture of sand, or the peat may be omitted.

### WILD PLANTS.

I BEG to thank "H. B. B.," page 150, for the very interesting additional remarks he has made to my previous list of hardy native plants, the study of which I am sorry to see so much neglected at the present day. Wild plants have a charm entirely their own, and I well remember almost envying a fellow traveller on a coach top and the smiling approval he received from all when, on the coach stopping to change horses at an hostelry on the edge of a wild moor, the gentleman alighting, as it was customary for most people to do at such times, instead of lingering about the door of the inn went back a little distance and industriously employed himself in gathering sprigs of the Bog Myrtle (*Myrica Gale*), which he had spied in passing by, and presenting first the ladies and then some of the gentlemen with a few sprigs of the sweet-scented shrub. It was pleasing to see the delight of the recipients.

Nothing in cultivation could be so plentifully obtained; and I am not sure but this *Gale* would suit a fashionable wedding bouquet as well as the orthodox Myrtle. But it is not my purpose here to dilate on wild plants in detail, for I have been so long estranged from them that I can recall but few to my memory that are of especial interest unless it be *Primula farinosa*, which being met with in few localities in a cultivated country was at one time regarded as rather a choice plant.

Was not the purple *Euphrasia* mentioned by "H. B. B." *Bartsia odontites*? a very common plant, often met with at the same place as *Euphrasia*, and often found most plentifully by the lane sides of a cultivated district. It is very abundant, and certainly not by any means a choice plant; while *Erythraea Centaurium*, often found in similar situations, is pretty, and I believe is often met with in gardens. But as I have said before, I do not mean to enter into the merits of particular plants, but again to call attention to them as a whole, and to claim for them a share of that attention which seems to be directed to one or two fashionable objects alone.—J. ROBBINSON.

### A DAY IN HERTFORDSHIRE.

A JOURNEY of rather more than a hour's duration transported us one dull day in September from the busy metropolis to the quiet, ancient, and unfortunately not very clean town of Hertford, with its crooked narrow streets, multitudinous beer-shops and breweries. Old enough it certainly is, but by no means venerable or picturesque, and with all deference to the local authorities we venture to think that the sanitary arrangements in respect to unpleasant odours are open to much improvement. But our business was not with the charms or defects of the town, for we were bound on a short visit to two of the many gentlemen's seats in Hertfordshire—the Goldings and Woodhall, the latter of which has a claim to a place in history, and both afford examples of "good gardening," and that was sufficient to induce us to visit them.

WOODHALL is the country seat of Abel Smith, Esq., Member of Parliament for the county of Herts, and is situated about four miles north-east of Hertford. The mansion is spacious and most pleasantly located, being placed on rising ground in a very picturesque portion of the park, and commands an extensive view of that undulating well-wooded scenery peculiar to the county. At the lower portion of the park near the farm a small winding stream like a silver streak adds considerably to the beauty of the prospect. The park comprises about four hundred acres of extremely diversified aspect, abounding in fine trees, with the common Bracken in large vigorous patches underneath them, through which wander the graceful deer that appear to be very numerous. One noticeable feature there is the handsome drive as straight as an arrow which extends from the stables to the upper lodge, a distance of three-quarters of a mile. It is bordered on each side by magnificent specimens of Oaks, Beeches, Elms, &c., and in its course dips and then rises again towards the upper end. The stables, too, have been converted into quite an architectural ornament to the estate. Viewed from a short distance on the drive the front appears to be a handsome stone arch or gate surmounted by a small dome in which is a clock; in fact, until very close to the building its real character could not be detected. This is a highly commendable mode of combining use with ornament, and one that might be worthily imitated in many estates.

Now we come to the garden, the chief object of our visit. It is about six acres in extent, situated near the house, and is enclosed by walls, the kitchen garden being again divided from the portion devoted to the ranges of glass. At the upper part is the bothy once occupied by Sir Joseph Paxton, who at Woodhall commenced his gardening career as kitchen boy, and opposite the bothy is the residence of the gardener Mr. John Beale, who has most creditably had charge of the garden for thirty-two years. The first house we entered was the early vinery, which is in two compartments that form respectively the first and second in the order of forcing. With the exception of two white varieties Black Hamburg occupies the whole of this range. The Grapes had all been removed, but the canes are remarkably vigorous and thoroughly ripened, and promise well for another season. The next range is about 120 feet long in three compartments, and contains the later Grapes. Muscat of Alexandria was bearing a fine crop of rather small bunches fairly well coloured, but the Black Hamburgs were excellent in size, colour, and flavour, and the crop was large. These two ranges have a south-easterly aspect, and the Vines have



both inside and outside borders. Pines are also grown to some extent, and exceptionally healthy and vigorous they were at the time of our visit. There are several other houses devoted to plants, and in all alike the same care and practical knowledge of their requirements is evident in the clean fresh growth. Outside, the walls are worth a visit; one in particular with a south-east aspect to which Pear trees are trained, is about 200 yards long, and the crop of Pears is astonishingly great, although their satisfactory ripening is doubtful. Some of the best varieties are grown, such as Glou Morceau, Beurré de Rance, Marie Louise, Joséphine de Malines, Beurré d'Arenberg, and Winter Nelis. On another wall 130 yards long with the same aspect Peaches are in fine condition, the crops being large and the trees remarkably healthy. Of other fruits the crop of Plums is fair, Apricots rather poor, also Cherries; Gooseberries are sparse, but Currants about an average crop.

The kitchen garden is well kept, and all the crops are in excellent condition, one quarter of Brussels Sprouts being especially noteworthy. In front of the Peach wall referred to above is a long border most tastefully and effectively planted with scarlet and pink Pelargoniums, relieved by lines of Pelargonium Flower of Spring, Iresine Lindeni, and Purple King Verbena, and even in such an unfavourable season as the present one the appearance of the border is very beautiful, and we have not seen one that could rival it.

The flower garden is not very extensive, but is well kept, the beds being of various forms and planted in the ordinary style. Carpet bedding has not yet been tried there, but we think that some of the beds in the front of the house would be well adapted for this mode of bedding. Several fine trees are noticeable near the house, especially some handsome Copper Beeches, one being upwards of 60 feet in height; there are also

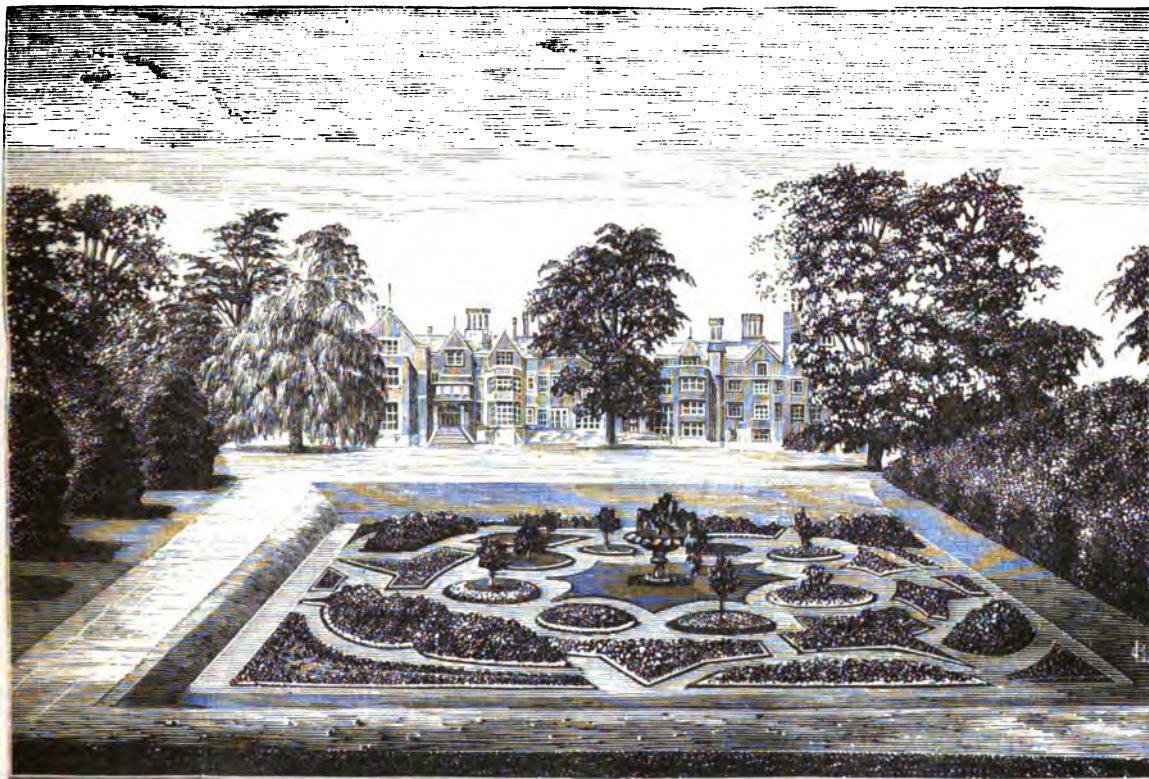


Fig. 25.—GOLDINGS.

some good specimens of the common Beech. We have briefly enumerated the chief points of interest, but to note in detail all that is to be seen and admired in a garden like this would require considerably more space than we have at our disposal; suffice it that our visit was an extremely pleasant one, thanks to the cordiality of Mr. Beale and his intelligent foreman Mr. Wells.

THE GOLDINGS is the seat of Robert Smith, Esq., brother to the owner of Woodhall, and by a singular coincidence the gardener, Mr. James Beale, is related in the same degree to Mr. John Beale of that estate. It is situated three miles nearer Hertford than Woodhall, but, like the latter, it is on slightly elevated ground, and commands a pretty view, but not very extensive. The annexed engraving (fig. 25) represents the south side of the house and the flower garden. The tree near the centre is a handsome Copper Beech, and there is another at the left of the engraving; on the right is a bank of fine old Yews. The beds are tastefully planted in the ordinary manner; and although the Pelargoniums, owing to the unpropitious season, are rather deficient in flower, the general effect is good, and the contrast with the extremely well-kept lawn is very pleasing. The glass is not extensive, but there is an air of neatness everywhere that is not always found in more pretentious establishments. Grapes are remarkably well

grown, and some of the Muscat of Alexandria and Black Hamburghs were equal to any we have seen this season. Figs, Peaches, and Nectarines are excellently cultivated, judging by their general health and vigour and the fine crops of fruit the trees are bearing. Plants are not grown in very large numbers, but the Ferns are good, and in a small greenhouse Fuchsias are trained up the roof, and flower most profusely. Mr. Beale finds them invaluable for cutting purposes. The principal varieties are Souvenir de Chiswick, Venus de Medici, Sir Colin Campbell, Marquis of Bristol, and Rose of Castille. The kitchen garden bears good witness to the skill of the gardener, for it is remarkably well stocked, and the crops are in fine condition generally. Outdoor fruits are in fair numbers, especially Pears. Mr. Beale is evidently a thoroughly practical gardener, and one who takes great pleasure in his work.—VISITOR.

FRUITS AND SEEDS.—At the meeting of the British Association, in the Department of Botany, Sir J. Lubbock, M.P., read a paper on this subject. He called attention to the differences presented by seeds, some being large, some small, some covered with hooks, some provided with hairs, some smooth, some sticky, &c. After observing that there were reasons for all

these peculiarities, he explained some of the more striking. In the first place, many seeds required protection from birds and insects, hence the shells or husks of the Beech, Spanish Chestnut, Horse Chestnut, Walnut, &c. The modes of dispersion by means of which seeds secured a sort of natural rotation of crops were next described. Some plants threw their seeds. Thus in the common Cardamine the outer membrane of the pod became very tense, and when ripe, at the least touch gave way at the base, and, curling up with a spring, threw the seed 3 or 4 feet. Common Geraniums threw their seeds, and some of the Cucumbers, but in these cases the mechanism was different. He then described the means of dispersion possessed by seaweeds and other low organised plants. Among the higher plants the seeds were transported by the wind. Sometimes the whole plant was thus blown about, as in the case of the celebrated Rose of Jericho. Many seeds were provided with a wing, which caught the wind, and these and kindred aids in dispersion were as various as the plants themselves. He then proceeded to the case in which the dispersion of seeds is effected by the agency of animals. In many cases the seeds were surrounded by a sweet fleshy pulp which was eaten, while the true seeds, being surrounded by a tough shell, remained undigested. Such fruits were generally bright in colour, such as the Strawberry, Peach, Apple, Currant, &c., the colours, like those of flowers, serving to attract animals. In other cases the seeds adhered to animals by hooks and by sticky glands. The next point was that of seeds reaching spots suitable for growth. Most seeds, they knew, germinated on the ground; the Mistletoe however, was parasitic, and its seeds were embedded in a viscid substance, so that if dropped by a bird on a bough it adhered to it, and was in no danger of being blown or washed off. An allied species, described by Sir J. Hooker, which lived on the Beeches of Terra del Fuego, had four long feathery flexible appendages. By means of them it was blown from tree to tree, and as soon as the seed touched a twig the appendages twined round it, and thus anchored the seed. In some cases plants buried their own seed. This was the case with our Clover and the Ground Nut of the West Indies. In both cases the seed was forced into the ground among the grains. The Cranesbill's seed was pointed and clothed with short hairs, terminating with a spiral appendage covered with similar hairs. Now if one of these seeds was laid on the ground it remained quiet as long as it was dry, but as soon as it was damp the hairs on the seed commenced to move outwards, gradually raising the seed into an upright position with its point downwards. The spiral appendage then began to unwind, and if its hairs came in contact with any obstacle, such as a leaf or twig, as was most probable, the seed was then forced into the ground. The lecturer in conclusion called attention to mimicking seeds, the pods of which looked so exactly like worms that birds were induced to peck at them.

#### NOTES ON STRAWBERRIES.

If those who write their experience on Strawberry culture would at the same time state in what part of the country the crops are grown, also the nature of the soil they have to deal with—whether clay, light loam, or medium—a much better conclusion would in most instances be arrived at. I would suggest also that nurserymen, than whom none else have the information so ready at hand, would do well to bracket together in their catalogues those varieties that fruit simultaneously, classifying them under the headings of earliest, second early, midseason, rather late, and very late. This would prove valuable to purchasers by enabling them to select their varieties for succession throughout the entire season, more especially to amateurs having but little acquaintance with the different varieties, and would doubtless lead to a more extended cultivation of this useful, wholesome, and delicious fruit.

Reliable information being of great importance to the readers of the Journal, I wish to correct what I conceive to be some errors on page 125. "C. P. P." contributes valuable information from time to time, but I think he was less accurate than usual when he described Rivers' Eliza and Coxcomb as late varieties. In my experience neither of them are late, and in this opinion I am supported by good authority—Mr. Rivers, who raised Eliza, and it is described in his catalogue as early. Coxcomb is also an early Strawberry. I have grown it for the last six years, having obtained it from Messrs. F. & A. Dickson & Sons, Chester, a firm noted for the correct nomenclature of its supplies. It is not quite so early as Black Prince, Alice

Maude, La Grosse Sucrée, and Early Prolific, all of which it succeeds; but I have President growing in the same bed as Coxcomb, and can always gather a dish of fruit from the latter three or four days earlier than the former, which is catalogued as an early variety. Possibly this is the first year "C. P. P." has fruited Eliza and Coxcomb; if so I can readily allow for his having classed them as late varieties, since all outdoor fruits are quite out of character this season as regards their usual time of fruiting, and although he may have fruit in September this year of those two varieties he must not expect it another season unless it should be similarly cold and ungenial.

The annual horticultural Exhibition is held here (Stone, North Staffordshire) during the first week in August, and only by shading the few remaining fruits on the plants a week or two previously to delay their ripening has it been possible to obtain a plate of Coxcombs for the Show when all the large fruits had been previously gathered. This year, however, the season being backward, its fruits were in abundance, and were exhibited in the finest form, which carried off the highest honours. Frogmore Late Pine succeeds it, and also excels it in flavour, but not being so hardy it requires a warmer and more sheltered position, with generous and attentive culture; it is then a grand variety, of large size and a good bearer. It has not done well here this season, as being in an exposed position it was injured by the severe winter and spring. The plant is not very robust, and the crop is not so large as that of Coxcomb, the yield of which is enormous here on a stiff clay soil. I have tried it on a lighter soil, and found it less productive and smaller in size. It is of very robust growth and very hardy; colour of fruit a bright salmon, surface even; seeds of a greenish yellow; flesh a pinkish white and rather firm, very juicy and of good average flavour; calyx not reflexed; shape—the largest berries mostly cock's comb, the others bluntly conical. President has not set its fruit so well with me this season as heretofore; its flavour, too, has not been so good. In warmer seasons when thoroughly ripe its flavour has always been superior to Coxcomb, but it does not produce so great a quantity of fruit on a clay soil as the latter does. I have not yet tried it on a lighter soil, but have heard of greater success having been obtained thereby.

In former seasons I have generally gathered my first Coxcombs about the 22nd of June, finishing by the end of July or the first days of August; President the 25th of June, finishing about the 27th of July; British Queen June 28th, finishing about the same date in July. This year my first gathering of Coxcombs was made on the 24th of July, and the heavy incessant rains of the week ending August 24th have washed clean away the fruits that might possibly have lasted the month out had the weather been dry and fine.

Before closing my remarks I wish to advert to the size of Strawberries. When the largest Strawberry was being inquired after in your columns a few years ago the Rev. Mr. Radcliffe brought Coxcomb to the front, stating that "his man Stephanie, who had then gone to Canada, had when in his employ measured its fruit with the tape, and found some 11 inches round." The dimensions seemed to stagger me, and doubts arose in my mind as to the accuracy of "Stephie's" measurement. But they are now entirely dispelled. A few weeks ago, when standing with a few friends in the midst of a plot of Coxcombs, the reverend gentleman's assertion was adverted to. We resolved to bring to the ordeal of the measuring tape such fruits as we could then select (the largest having been gathered a few days previously) the result being that three thus measured each ranged close upon 10 inches round.—THOMAS FORMAN.

I AM sorry that Dr. Roden should feel aggrieved at my remarks about his Strawberries, and am quite willing to withdraw my observations, but he quite misunderstood me. I had no intention of being satirical or to disparage his efforts. *Qui palmam meruit ferat.* Mr. C. P. Peach said in one of his letters that he had tried several of Dr. Roden's seedlings and was willing to send a short report of them to the Journal, and my remark was merely to encourage him to favour your readers with the benefit of his notes, for which I thank him. Satire is a two-edged sword, which I think is out of place in the gardening world, where if anywhere there ought to be the peace and freedom from strife, which is too common elsewhere; and I would far rather extend the right hand of fellowship to a man any day, however humble or however poor his efforts,

than throw cold water on them or make them the object of ill-natured criticism.—AMATEUR, *Cirencester*.

## HORTICULTURAL NOTES.—No. 1.

### NEWBURY AND DISTRICT.

ALTHOUGH comparatively of little importance and but little known, Newbury is a very busy and thriving little town. The streets are unusually commodious, and the houses and shops, &c., clean and well kept. It is situated on the river Kennet and the London and Bath road; but the railways of the present day have, as a matter of course, detracted considerably from the importance of the latter, in fact have spoilt the trade of the large old-fashioned inns which were so well patronised in the stage coaching days. To anyone on a horticultural tour Newbury presents a capital central spot from which several fine well-kept gardens can easily be reached. There is also some splendid scenery, and many historical spots and ruins, with the accompanying legends, which many tourists delight in. During the first week in August I inspected several fine gardens, and there were still more to visit had I time to have done so. Some of the gardeners at the places visited were very successful at the Newbury Flower Show held on August 4th; notably Mr. Atkins of Lockinge Park and Mr. Howe of Benham Park, both staging many well-grown plants and some capital fruit and vegetables in the various well-filled classes. The Committee of the Society are all non-professional horticulturists, which is undoubtedly a mistake, as from its central position, and judging from the extraordinary attendance of visitors, this, with a little spirited and more practical management, might become one of the best shows in the county of Berkshire. After this digression I propose giving a necessarily rather brief notice of a few of the leading places in the district, commencing with the first, and in some respects the finest, place visited.

### HIGHCLERE CASTLE.

This, the seat of the Earl of Carnarvon, is situated on the borders of Hampshire, and is about six miles from Newbury. The drive to it from that town is a very delightful one, the scenery in some instances being grand, and the views in the extensive park and grounds are very fine. Cedars of Lebanon are as plentiful as Oaks are in many parks. All are very fine specimens, and growing luxuriantly. In the grounds there are some become drooping in habit, the style of growth resembling that of the Hornbeam, which makes them very effective. Near these is a very fine specimen of *Picea cephalonica*, which, as far as I can judge, is from 70 to 80 feet high, and very symmetrical. It is considered by some to be the finest specimen in the country. There are also good specimens of *Picea Pinsapo*, *Taxus adpressa*; and of deciduous trees *Juglans nigra*, *Sophora japonica*, and *Pavia californica* are worthy of notice. The latter was flowering freely, and the Horse-Chestnut-like blooms are very effective. There are large numbers of *Kalmias*, *Asaleas*, *Rhododendrons*, &c., grouped about the grounds, which are very extensive, but rather cheerless during the summer months in consequence of the flower garden being to a certain extent separated from them. The flower garden, forcing houses, and conservatory are situated in what probably was once a kitchen garden, the walls of which still remain. The conservatory, prettily situated, is very old-fashioned, and neither the contents of this nor of the other houses call for any special mention, all the structures in fact being unworthy of the surroundings. In the flower garden a number of *Crinum capense* were flowering freely, and in the hardy fernery the pretty little *Cystopteris bulbifera* is worthy of notice on account of the rapidity with which it spreads. The fronds are very light and useful for cutting. The kitchen garden is situated some distance from the Castle, and is well walled in and stocked with all kinds of fruit trees. The crop of Apples is poor, and the trees appear in an unhealthy state. Those carrying the best crop are the Wellington (Dumelow's Seedling), and Hawthornden. Pears are healthier, and are a very good crop, but rather small, the most prolific being Winter Nelis, Autumn Bergamotte, Beurré de Rance, and Hacon's Incomparable. Peaches, Nectarines, and Apricots are very thin; but Plums are a little better, the best being Kirke's, Denyer's Victoria, and Jefferson's. The trees of Gooseberries and Currants, both here and nearly in every garden in the district, are in a very bad state, caterpillars being unusually destructive. The Strawberry crop was good, and the varieties preferred by Mr. S. Ross, who for many years has been head gardener here, are Garibaldi,

President, and Sir J. Paxton; the latter being in every respect excellent. The vegetable crops were looking well, and are grown in large quantities to meet the requirements of the establishment.

### SANDLEFORD PRIORY.

On the road back to Newbury I called at the residence of W. P. B. Chatteris, Esq., which is situated at about two miles from that town. The gardens here are principally famous for the splendid collection of choice named *Rhododendrons*, which is probably the finest private collection in the country. Mr. Brown, who for many years has been in charge of this place, has good reason to be proud of the *Rhododendrons*, more especially as he is the raiser of many fine varieties that are in the trade, for which, however, he has derived but little profit or renown beyond the immediate neighbourhood. That beautiful variety Lady Cathcart was raised here, and at the time of our visit there were numbers of plants in bloom, seedlings raised from that variety. The flowers are not large, but the trusses are fine and very compact, and in every instance nearly white. It is, on account of its late blooming, colour, and compact truss, a most useful variety, especially for cutting purposes. As before stated, the collection is remarkably large, and it is being annually extended, and as far as growth is concerned, is well arranged. In most instances a compost consisting principally of peat is made for them, but those in the natural soil are also growing in a vigorous manner. *Kalmias* and *Asaleas* are growing equally as well, and the whole must present a grand sight worth going many miles to see. The flower gardens are well kept. On the walls in the kitchen garden the Peach trees now appear very bad, in many instances three parts of the trees having had to be cut out. They no doubt were damaged by the severe frosts, and the uncongenial spring finished the ruin. This subject, however, will again be alluded to, to show the importance of giving protection to the trees in the spring. Here also Pears are small and very abundant on the walls, notably Marie Louise, Williams' Bon Chrétien, Ne Plus Meuris, and Beurré de Caplaumont. The crop of Plums is thin, but Figs gave promise of a good crop, the variety being Brown Turkey. Small fruit was very abundant, but the trees are much damaged by caterpillars. The favourite Strawberries were President and Sir J. Paxton. Birds in this and other places have this season being unusually destructive. Not many plants are grown in the houses, but Melons, Pine Apples, and Grapes are in good numbers.

### BENHAM PARK.

The pleasure grounds and mansion are in a state of transition, the proprietor, Sir R. Sutton, Bart., meanwhile residing at Barton Court, a few miles from here. We, however, found much to interest us in the many well-arranged fruit and plant houses, which really merit a more detailed account than our notes or memory will supply. Peaches and Nectarines are grown remarkably well, all being healthy and vigorous in spite of the very heavy crops borne by them. In most instances they are trained up the roof of either the back or front of the houses. The colour and flavour of the Nectarines especially were particularly good. Most of them are growing in a good loamy soil, the roots having access to both in and outside borders. The favourite Nectarine for all purposes is Elruge, and Royal George and Violette Hâtive are considered the best and most useful Peaches by Mr. Howe, the very practical gardener in charge. Figs also are grown trained up the roof, and nothing could be finer than the plants of White Marseilles and Lee's Perpetual (Brown Turkey) which conjointly occupy the roof of a house fully 32 feet long and 12 feet wide. From the former variety one hundred dozen good fruit had already been taken this season, and there is still abundance showing. The earliest and perhaps the best fruit are gathered from the apex of the trees, but the growth is very equally distributed through the house. This is maintained by annually cutting clean out large and comparatively exhausted branches, laying-in the young and more vigorous growth previously selected and trained for that purpose. Grapes in the different houses are all healthy and carrying heavy crops. Madresfield Court grafted on Black Hamburgh is very fine, without any sign of cracking. Black Alicante, too, is remarkably good; and there is one house planted entirely with West's St. Peter's. The crop is heavy and the bunches large, but the berries are set very irregularly, too many being seedless. It keeps well, and is much liked here. The crop of Melons is remarkably good, and they had previously had some excellent fruit. The varieties grown were Victory of Bath,



still the best for early work: Dell's Hybrid, which here is difficult to distinguish from the Victory of Bath; and Benham Hybrid, the result of a cross between Scarlet Queen and Victory of Bath. In its style of growth and productiveness it resembles the latter variety, but the colour of flesh is not fixed; in fact, alternates between the two parents—the fault of too many new varieties. Slacked lime and crushed charcoal mixed in equal quantities are heaped round the stems of the Melons, not as a cure but as a preventive of the canker. The house of Cucumbers was very fine, the growth being healthy and plenty of handsome fruit being abundant. The favourite variety both with Mr. Howe and the cook is Freeman's Yard Long. It is certainly a very handsome variety, particularly good for exhibition, is free-growing and prolific, and the flavour is much liked. Mr. Howe has most of the best varieties in cultivation.

The houses are distributed about the kitchen garden, and going from one to the other we noticed a large number of well-trained fruit trees on the walls, some of which, more especially Pears, were carrying heavy crops of fair-sized fruit. The best were Glou Morceau, Marie Louise, Jargonelle, Jean de Witte, Hacon's Incomparable, Beurré Clairgeau, Beurré de Rance, Beurré Bosc, Beurré Diel, and Napoleon. Apricots do not succeed here, but Peaches are, for the year, remarkably good, the trees being both healthy and well fruited. This good result Mr. Howe attributes to the use of Parham's (of Bath) patent fruit-tree protectors, as previous to their introduction the Peach crop was invariably a failure. This will be better understood when it is stated that the gardens are in a valley, and consequently suffer much from late frosts. These wall protectors are also in use at Englefield Park near Reading, and will be alluded to more fully when that place is remarked on. The crop of Apples is a poor one, the only exceptions being espalier-trained Cellini and Lord Suffield. Small fruit and Filberts were plentiful. The kitchen garden is well stocked with vegetables, everything in fact being well done. The Globe Artichokes were banked up with ashes during the winter, and to this circumstance Mr. Howe attributes their escape from destruction by frost which proved so fatal to many plantations in this and other localities.—W. IGGULDEN.

## THE LONDON PARKS.

### HYDE PARK.

In consequence of the unfavourable weather of the present year the bedding in all the London parks falls far short of its usual brightness. The chief display of Hyde Park, as all who have once visited it well know, is confined to the series of beds that extend from the Grosvenor Gate to Stanhope Gate, between and parallel with the carriage drive and Park Lane. The beds are cut out in fine and well-kept turf, which for nearly half the distance is raised in the centre, the beds being in similar opposite pairs, while the portion near Stanhope Gate is flat, and the beds extend in a single row down the centre. The latter are usually devoted to carpet designs, but this season they are planted alternately with flowering plants. There is also a series of beds still nearer the road close to the Park railings. The forms of the beds are not very diversified, being oblong with rounded ends, circles, or what may be described as four-lobed, and there is a monotonousness in the edging which is not by any means pleasing. The beds in pairs on the raised turf near the Grosvenor Gate are all edged as follows:—First, *Lobelia pumila*; second, *Alternanthera magnifica*, and third, *Pelargonium Albion's Cliffs*, the centres being occupied with varieties of *Pelargoniums*. Some of the best *Pelargoniums* in these beds are Miss M. Holden, compact habit, well formed rich scarlet flowers in a medium-size truss; John Gibbons, rather strong in habit but bearing fine trusses of enormous flowers, intense glowing scarlet in colour, very effective; Jealousy, coarse habit, flowers small, of a bright salmon shade, and rather scarce; Letty Carr, very compact, with a neat truss of crimson scarlet flowers. One bed is planted with *Pelargonium Ariosto* and *Viola Blue Bell* intermixed, which would have been very pretty had the plants filled up the space a little more. A circle in which *Albion's Cliffs* is replaced by *Crystal Palace Gem* and a mixed centre composed of *Iresine Linden* and *Viola Golden Gem* is very pleasing; the latter is flowering very freely. The beds parallel with the above and nearer the Park boundary are edged with *Lobelia Blue King* and the golden-foliosed *Pelargonium Robert Fish*—an extremely agreeable contrast; and here we may remark the *Lobelia* named has succeeded well, the fine light blue flowers being produced most freely; *Lobelia Omen* is also very distinct and fine. The centres are planted with *Pelargoniums* as in the other beds. The

single central beds are partly edged with *Lobelia pumila*. *Alternanthera magnifica*, and *Crystal Palace Gem*, some with *Lobelia Blue King* and *Pelargonium Robert Fish*, and the others with *Pyrethrum parthenifolium aureum* and *Lobelia pumila*; the beds near the road having an edge of *Lobelia Blue King* and *Pelargonium Miss Kingsbury*. Among the *Pelargoniums* forming the centres the following are noticeable:—Sir H. Stanhope, rather strong in habit, flowers well formed in good trusses, colour an intense dark scarlet; Col. Wright, large trusses of dark salmon scarlet flowers, very showy; Wordsworth, small truss of bright scarlet flowers, habit fairly good; Lucy, an excellent variety, even growth, large truss of bright pink abundant flowers; for quantity of blooms this variety surpassed all the others. A mixed circular bed of *Viola Blue Bell* and *Pelargonium Princess Alexandra* edged with *Lobelia pumila grandis* and *Echeveria secunda glauca* is very bright and pretty.

The carpet designs are generally good, two of which deserve particular attention. One that we have described as a four-lobed bed is edged with *Echeverias*, *Pyrethrum*, and *Alternanthera magnifica*, the groundwork being *Pyrethrum*, in which are formed heart-shaped designs of *Sempervivum arachnoideum* surrounded with fine lines of *Alternanthera amœna* and *Golden Feverfew*, lines of *Mentha Pulegium gibraltaria* radiating from the centre. The other is a circle, the groundwork formed of *Alternanthera amœna* and *Sedum glaucum* edged with *A. magnifica* and *Echeverias*, the central plant being an *Aloe variegata*.

Leaving that portion of the Park we turned in the direction of "the Row," between which and the carriage drive is a sheltered hollow where we find a few beds and some subtropical plants. Considering that these are all overhung by trees—no slight disadvantage this season, the plants appear much better than could be expected. A mixed circular bed has a groundwork of *Alternantheras* and *Pyrethrums*, lines of *Chamaepeuce diantha*, a central *Dasylium*, plants of *Sempervivum arborescens* at intervals, and an edging of *S. Haworthii*. Another circle has a centre of *Erythrina* surrounded by *Pelargoniums*, *Calceolarias*, and *Lobelias*; another much larger one has a central plant of *Seafortia elegans* surrounded by small *Cordylines*, the design being somewhat complicated in *Mesembryanthemum cordifolium variegatum*, *Pyrethrums*, *Alternanthera amœna*, and *Echeverias*. *Musae*, *Palms*, and *Tree Ferns* are dotted about, two fine specimen *Seafortias* being especially noticeable. The surface of the turf is pleasantly undulating and excellently kept. On the opposite side of the Row is a large circular clump of *Hemp* and *Cannas* margined with *Funkia Sieboldii*, all vigorous; also a crescent of *Solanum robustum*, *Abutilons* and specimens of *Humea elegans* with an edge of *Funkias* and *Iresine Herbstii*. A short distance west of that point is a charming nook known as "the dell," there the overflow of the Serpentine forms a little stream which is margined with *Osmunda regalis*, and the sloping banks on each side are planted with clumps of *Phormium tenax* variegatum and *Bambusas*, and single specimens of *Monstera deliciosa*, *Latania borbonica*, *Seafortia elegans*, and *Musa Cavendishii*.

Having thus briefly glanced at the chief points of interest in that aristocratic region we proceed towards Kensington Gardens, where we take the pleasant shrubbery walk that passes near the Albert Memorial. Among the shrubs are many very elegant species, which are not by any means so common as they deserve to be. One of these is *Amorpha Lewisii*, a papilionaceous shrub with light green pinnate foliage. It is very attractive and graceful, and contrasts well with the darker *Hollies*, *Evergreen Oaks*, &c. *Paulownia imperialis* is also noticeable for its handsome foliage, which is very distinct. This tree flowered last year, but there is no appearance of bloom now. In front of the shrubs is a mixed border of *Phloxes*, *Violas*, *Stocks*, *Marigolds*, *Veronicas*, dwarf *Sunflowers*, *Echinops*, and numerous other plants in irregular clumps and patches. This walk is one of extreme beauty in the spring months when the numerous varieties of *Crataegus* are in flower, but even now it is not without attractions. The bedding at the south-east side of the Palace is usually very good, but it is rather disappointing this year, for, as in most other places, the *Pelargoniums* are nearly flowerless, but a ribbon border extending along the side of the lawn is prettily planted. The turf is in excellent condition, and a few *Palms*, variegated *Agaves*, *Musae*, &c., are suitably introduced.—L. C.

## WORK FOR THE WEEK.

### FRUIT HOUSES.

*Vines*.—The *Vines* in the earliest house should now be pruned if the wood is hard and well matured. Prune to a plump eye, having in view the keeping of the spurs as near the main rod as practicable. The house should be thoroughly cleaned, and if

necessary painted. Remove the loose bark from the rods, and then wash them with a solution of soft soap, 8 ozs. to the gallon of water. If there be any mealy bug or scale wash the Vines a second time with the soapy solution, adding a wineglassful of spirits of turpentine and methylated spirits, and in case of mildew add flowers of sulphur. The walls should be limewashed, and all made as clean as possible, removing the loose soil from the top of the border, and replace it with turfy loam to which has been added a sprinkling of half-inch bones. Any Vines in an unsatisfactory state may be improved by partially lifting their roots, removing the old soil and relaying the roots in fresh compost; but this should be done before the leaves fall. The house after the Vines are pruned should be kept as cool as possible so as to induce complete rest. Vines in pots for early forcing should now be fully ripe and at rest. Supply only sufficient water to prevent the destruction of the root fibres. Later Vines in pots should be placed out of doors to ripen the growth, the south side of a wall or fence being preferable. Young Vines that have made strong growth will be late in ripening their wood, and may be assisted with fire heat and free ventilation until the wood is brown and hard. Continue a night temperature of 70° to 75°, and 80° to 85° or 90° by day for late Vines until the Grapes are thoroughly ripe, ventilating freely and keeping lateral growths closely stopped. If the roots of late Vines are in outside borders it is desirable to protect them from heavy autumn rains, as when the borders are chilled and soddened the Grapes do not keep satisfactorily. The necessity for protection is not so great where the Vines are planted inside. Ripe Grapes should be frequently examined, removing decayed berries, and maintaining gentle fire heat to insure a dry airy atmosphere.

**Peaches and Nectarines.**—The trees in the earliest house will have shed their leaves, or nearly so, and the house should undergo a thorough cleaning, it being a good plan to syringe every part of the structure with hot water (140° to 160°), which destroys insects and softens the dirt so as to admit of its speedy removal with a brush and soap. The trees should be loosened from the trellis so as to admit of its being cleaned or painted, or the walls limewashed. The trees should then be pruned, thinning out any weakly growths not likely to carry good fruit. Beyond thinning out the shoots where too crowded no pruning will be necessary, as forced trees will not require to have the growths shortened back except for the production of shoots for extension. The trees should be dressed with tobacco juice or a solution of nicotine soap, 8 ozs. to a gallon of rain water, at a temperature of 90°, applying the solution with a brush. The loose surface soil should be removed and replaced with rather strong loam containing a sprinkling of half-inch bones. If the lights have been removed from the house it may be necessary to replace them to prevent the soil from becoming saturated by the autumn rains. Inside borders must not be allowed to become too dry, as the buds are liable to fall when in that condition. Trees in succession houses should, when the growth is free, be root-pruned or lifted as soon as the foliage shows indications of falling; if judiciously performed this will check their vigour and induce short-jointed fruitful wood. Any lifting or root-pruning should be performed before the leaves fall, affording a good watering to the roots afterwards, and syringing each evening for a few days. The trees will soon produce young active roots. In the latest houses a free circulation of air will be necessary, utilising sun heat by keeping the ventilators closer than usual, as with ventilation in the early part of the day the temperature may be allowed to run up to 80° or 85°, which will do more to ripen the fruit and wood than sharp firing in dull weather. A somewhat drier condition at the roots is desirable when the fruit is ripening, employing fire heat to maintain a night temperature of 60° to 65°, with an advance of 5° to 10° by day, which will admit of free ventilation. In unheated houses induce ripening by a somewhat dry atmosphere. Keep the wood thin, and stop any growing shoots to about 12 to 14 inches, and all laterals closely to one joint.

**Orchard House.**—Admit a little air early in the day, but allow the temperature to rise to 75°, or even to 80°, closing or reducing the ventilation early so as to enclose as much heat as practicable. Employ no more water than is necessary to keep the foliage in good condition, and the less of it in the atmosphere the better, but insects must be kept in check by an occasional syringing. Stop any strong growths closely, or remove them altogether, as they will appropriate more than their share of nutriment, besides retarding the ripening of the fruit and wood.

#### FLOWER GARDEN.

The following annuals should be sown without delay:—*Collinsias*, *Candytufts*, *Bartonias*, *Asperula azurea setosa*, *Eschscholtzias*, *Kaulfussias*, *Limnanthes*, *Nemophilas*, *Silenes*, *Whitlavia*, *Virginian Stock*, *Saponaria*, *Platystemon*, *Lupinus nanus*, *Lasthenia*, *Gilia tricolor* and vars., *Eucharidium*, *Erysimum*, *Clarkia pulchella* vars., and *Sweet Alyssum*. They may be sown in sheltered borders and transplanted in spring. They will in ordinary seasons afford a fine display in spring or early summer. Herbaceous plants are becoming seedy, and should have all dead stems or stalks removed, securing autumn-flowering *Asters* and *Chrysanthemums* against winds by staking and tying. *Anemone*

*vitifolia alba* is one of the finest late summer and autumn-flowering plants, and should have a place in every garden; also *Sedum Telephium purpureum*, *Solidago altissima*, and *Tritomas* are fine for autumn. Roses will be the better for the removal of decayed or bad flowers, and the shortening of irregular growths. Cuttings of well-ripened wood will strike freely inserted in sandy soil at the north side of a wall or fence. Stocks recently budded should be examined, the ligature loosened or removed as may be necessary. Tea-scented Roses trained to walls should be stimulated by frequent supplies of liquid manure to enable them to perfect good blooms, as they will for some considerable time yet if not allowed to lack moisture at the roots. For a supply of blooms for cutting in early spring the old Banksians are unrivalled, but they are seldom seen producing flowers freely, which is chiefly due to the wood not being sufficiently ripened. They flower on the short medium-sized wood; any that is gross or shows a tendency to grow more than a foot in length should be cut out. The propagation of bedding plants should be brought to a close as soon as possible, so as to obtain well-rooted cuttings before winter. There is yet plenty of time for the propagation of *Calceolarias* and *Violas*. Let the beds and borders be frequently examined for the removal of old flowers, leaves, and irregularities of growth. The grass grows thick and fast, and should be mowed and rolled frequently, so as to secure a good solid green sward for the winter. If the walks are in the least worn give a sprinkling of fresh gravel after hoeing up the weeds, and rake and roll thoroughly, as a walk to be agreeable must be clean and dry. If the walks cannot be broken up a few pots of salt water applied during sunny days will destroy the weeds and save much time and labour in hand-weeding.

#### PLANT HOUSES.

**Stove.**—Tuberous-rooted *Gesneras*, *Gloxinias*, and *Caladiums* as they commence ripening should have water gradually withheld, but do not place them in a lower temperature to stop their growth and starve them into rest. *Mezeryia erecta* is one of the finest of stove plants with violet or purple flowers, and continues in flower for a longer time than many, even all through the summer until late in autumn if well supplied with water and liquid manure. It is deciduous or nearly so, and requires to be kept dry in winter. *Bougainvilleas* that flowered in early summer will now be in fine condition, also *Clerodendron Balfourianum*, and they should be well supplied with water until the flowering is past, when they must be assigned a light airy situation. *Allamandas* and *Ixoras* that were started late will naturally continue blooming the longest; they should be placed at the warmest end of the stove. *Acalypha Macafeana*, *A. macrophylla*, *A. marginata*, and *A. musaica* are fine for decorative purposes when about a foot high; the foliage is broad with a metallic lustre, and the plants grow freely in a rather moist stove. Cuttings strike freely in gentle heat in a compost of loam with a third of leaf soil and sand. *Torenia Baillonii* keeps on flowering through the winter, and for its distinctness is well worth a place in every collection however small. It strikes freely from cuttings inserted in heat, and flowers when in quite a small state. The atmosphere of the stove may now be rather drier than usual. Blinds should be dispensed with, except for the fine-foliage plants. The house should have a thorough cleaning both inside and out. The temperature must be maintained at 65° at night, and 70° to 75° in the day by artificial means, up to 80° or 85° with sun.

**Orchids.**—A warm moist atmosphere must be maintained, and every encouragement given to such plants as *Aërides*, *Phalæopsis*, *Saccolabiums*, and *Vandas*. The blocks, baskets, and pots must be damped over in the morning, and in the afternoon of fine days a sprinkling overhead will be beneficial, care being exercised not to render the sphagnum or peat too wet. The shading must only be employed to prevent the sun scorching the foliage. The temperature of the East India house may range from 75° to 85° by day until the end of the month, when a gradual reduction must be made. Shading on the Cattleya house should be dispensed with altogether, the glass being cleaned to afford all the light possible, as it is important to have the plants well ripened before the winter. All pseudobulbous plants which have completed their growth should have an increased amount of air and be fully exposed to the sun, such as *Lælia alba*, *L. acuminata*, *L. majalis*, and *Cattleya citrina*. Keep *Lælia purpurata* and *Cattleya Mossii* in the warmest part of the house to enable them to complete their growth as soon as possible. *Calanthe vestita* and *C. Veitchii* may have weak liquid manure so as to encourage them to make large bulbs, as the stronger they are the finer will be the spikes of bloom. They should also have plenty of light, as the principal thing an Orchid grower will now have to keep in view is to have the bulbs and leaves well matured before the dull short days set in, which can only be done by exposing the plants to as much light or sun as they can bear. Any *Odontoglossums* that started late into growth and require larger pots may still be attended to, disturbing the roots as little as possible.

#### TRADE CATALOGUES RECEIVED.

T. Bunyard & Sons, Maidstone Kent.—Catalogues of *Bulbs*, *Roses*, and *Fruit Trees*.



J. George Hill, Crewkerne and Yeovil, Somerset.—*Catalogues of Bulbs and Fruit Trees.*

Francis & Arthur Dickson & Sons, Chester.—*Catalogue of Bulbs.*

### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

**BOOKS (L. Shilldham).**—We do not know of a more practical work on Orchids published at a moderate price than Mr. B. S. Williams's "Orchid Grower's Manual." Mr. Williams also publishes a work on stove and greenhouse plants that may suit you. They can be had from the Victoria and Paradise Nurseries, Holloway, London, price 5s. each, post free 5s. 6d.

**REMOVING BUDDING BRIARS (Jagulier).**—They will transplant safely in November provided you keep the roots moist in transit to your new garden; but the buds will probably not make such strong growth nor produce such fine blooms the first year as if the Briars had not been removed.

**ACHIMENES AFTER FLOWERING (Amateur).**—Water should not be withheld entirely so long as the foliage remains green, but it may be given in less quantities after the flowers fade. Too often these plants are much neglected at this period of the year by being crowded under stages where they can have little chance of forming and maturing fine tubers. The plants should have light and air with sufficient water to keep the foliage fresh as long as possible. The tubers may remain in the soil during the winter, the pots being placed in a house or shed where the temperature is not below 45°.

**SEEDLING RASPBERRY (Amateur).**—The paper box in which the fruiting spray was posted was quite flattened in transit, and all that arrived of the fruit was a mass of pulp.

**CLETHRA ARBorea (Poor Dick).**—If you cannot find this plant in the lists of local nurseries you will find it by referring to the catalogues of such firms as Messrs. Veitch, Chelsea; Williams, Holloway; and Henderson, Pine Apple Nursery, London, all of whom offer it at a moderate price.

**POTTING SHED (An Irish Subscriber).**—Not knowing the extent of the ground nor your locality we cannot furnish you with a specification. Apply to three or four builders, and select the plan that you prefer from the specifications they furnish.

**BOUQUET-NOSEGAT (Ignoramus).**—The terms are synonymous; they are applicable to a few combined sweet-smelling flowers.

**PAINT FOR GARDEN STRUCTURES (F. J.).**—The paint you name is good for outside work but is too rough for the stages, &c., inside the houses, as they cannot be washed so quickly and cleanly as when painted with smooth lead paint. Paint made of the best white lead and oil is equally good for outside work, and is not excelled by other paints for the same purpose.

**ROMAN HYACINTHS (A. L. D.).**—You cannot obtain the bulbs too soon. They may be potted in the same kind of soil as that employed for other Hyacinths, and be plunged similarly until the pots are filled with roots, when they may be placed on a shelf in a moderately heated house, when flowers will be produced in November which are very valuable for cutting. You may place five or six bulbs in a 5-inch pot.

**BLUE NEMOPHILA FOR SPRING (A Lady).**—Sow the seed at once in shallow drills a foot apart in an open position in the garden; sow rather thinly and cover the seed lightly with fine soil. The seed bed should not be near any vegetable crops which afford harbour for slugs, that eat the young Nemophila plants with great relish. When the plants are large enough to be handled thin them out so that each plant stands singly, when they will assume a sturdy habit and endure frost much better than if crowded thickly together in the rows.

**CATERPILLAR ON ROSE (Biceps).**—The specimen reached us alive and well; it is the caterpillar of the Peppered Moth (*Amphidasis betularia*), one that is apt to vary much in colour. Like other Geometrids it is fond of putting itself in a stick-like attitude, perhaps thus escaping birds. The food is various, usually such trees as the Acacia, Birch, Lime, Oak, but individuals accidentally dislodged by the wind will settle on shrubs that may be near, especially of the Rosaceous order.

**HARDY CLEMATIS (Apricola).**—Besides C. Jackmanni the following are good summer and autumn-blooming varieties:—Prince of Wales, purplish puce; Rubella, claret purple; Star of India, reddish plum; Mrs. James Bateman, pale lavender; and Lady Bovill, greyish blue. As a white Miss Bateman is good, but it flowers earlier than the preceding. If you procure strong plants in pots you may plant them now in deep well-pulverised and fertile soil.

**MULCHING STRAWBERRIES (J. E.).**—It is not necessary to mulch the young Strawberry bed now, but a covering of rich manure placed on the ground about November, not packing it too closely round the plants, is generally beneficial. Stir the soil as you propose, and apply liquid manure if the soil is not rich. We have not tried supporting the fruit on wires, but have adopted string and stakes, also Birch sprays, with beneficial results during a wet season. During a hot and dry season there is little or no advantage in elevating the fruit above the foliage. Mr. Peach is such a careful and good cultivator that you will not err in carrying out his recommendations. The varieties you have planted are good.

**SALTING ASPARAGUS BEDS (M. M.).**—If the soil is strong and wet we do not think that salt applied now would be beneficial, but if light and of a dry nature a sprinkling of salt will do no harm and may do good. The best time for applying salt is early in the spring, just before the Asparagus heads make their appearance and when the seed of annual weeds is germinating. The salt will destroy the weeds. Another good dressing given a month after the first will keep the beds free from weeds during the season, and the Asparagus will be much benefited. It is deplorable to see Asparagus beds in gardens so crowded with weeds when it is so easy to prevent them by timely and sufficient applications of salt before the weeds are established.

**BREAKS OF ROSE GROWTH (T. Brook).**—The specimen is another instance of teratology, but no doubt it is due to the same cause that we before suggested, although in this case the flower was a little more advanced in formation before the fasciated stem bearing the two buds was produced.

We could trace the rudiments of stamens and carpels in this instance, and they were entirely absent from the specimen you previously sent.

**SEEDLING ZONAL PELARGONIUM (G. W. G.).**—The foliage is very fine, round, stout in texture, and with a well-defined zone. The flower truss is also fine, and the colour of the flowers clear bright scarlet. We are unable to judge of their quality, as for the want of a drop or two of gum nearly all the petals had fallen; the variety, however, appears a promising one and worthy of preservation, but does not surpass the best varieties in commerce.

**VINES UNHEALTHY (Lawster).**—Defective root-action is the primary cause of the condition of the Vines, but the scorching of the foliage has no doubt impaired the colour of the Grapes. The remedy is to produce surface roots. Give the border a heavy dressing of rich manure now, and if this is kept moist, and the roots of the Vines are already near the surface, it will become permeated with active feeding roots. The Vines will then produce foliage stouter in texture than the leaves you have sent, and will not be so liable to be scorched. Train the laterals thinly, and if the spurs are old and unsightly train up young growths from the base and gradually remove the old spurs and rods as the younger canes become large enough to replace them. If you can produce a mass of surface roots and encourage the production of young wood, so thinly disposed that it becomes well matured, you will obtain much better Grapes than you have now, and which will colour well if the Vines are not overcropped. We do not know whether woodlice eat the roots of Vines; we know they eat the roots of Orchids. They eat also Mushrooms and various fruits—indeed scarcely any vegetable food comes amiss to them. You may entrap them by placing boiled potatoes in small flower pots, covering the baits with hay, and laying the pots on their sides where the insects abound. If these pots are examined daily and the woodlice found are destroyed they will soon become less numerous, and by perseverance may be almost eradicated.

**WELLINGTONIA GIGANTEA CONING (J. S. G.).**—It has produced cones in many places, and we have heard that home-grown seeds have been known to show symptoms of germination, but that they never produced seedling plants.

**THE PEACH AND NECTARINE (James Turner).**—The Nectarine is merely a variety of the Peach (*Amygdalus persica*), and instances have occurred where Nectarines have been produced on the branches of fruit trees. The Nectarine is named on account of its smooth skin *Amygdalus persica lavis*.

**PORTABLE HOT-WATER APPARATUS (R. J. H.).**—We have not seen a good stove to be heated with gas or oil, with hot-water pipes attached such as you appear to require—namely, an apparatus suitable for heating a small greenhouse in winter, and removal during the summer months. An efficient and economical apparatus of the kind indicated would if advertised probably meet with a ready sale.

**MAKING ASPARAGUS BEDS (A. L.).**—Asparagus does not thrive well in clay soil, and you can only have good beds by employing large quantities of rough sand, coarse grit, and ashes, also incorporating as much as possible of decayed vegetable refuse, leaves, and manure with the strong soil of your garden. The soil should be dug deeply and thrown into ridges, these ridges being broken and turned frequently during frosty weather, and in the spring level the ground and work in the additions named. The beds in such soil should be raised well above the level of the ground. If they are 4 feet wide three rows may be planted in each bed, but beds 3 feet wide with two rows in a bed would perhaps be preferable in your case. The planting should be done just as the crowns are commencing growing in the spring, covering the roots with light compost. You can either raise your own plants by sowing seed or purchase stronger plants; both seed and plants can be had from nurserymen. It is not advisable to crop Vine borders, but a few rows of annuals near the margin of the border might not do any harm to the Vines.

**PROPAGATING PHILOXERA DRUMMONDI (A. L. S.).**—You have been rightly informed that the "cuttings will strike the same as Petunias," but the plants are not so good as those raised from seed, and a great percentage of them usually die in the winter. If you require early flowers you may try sowing the seed now, wintering the plants in pots on a shelf in a very light house. These plants, if kept sturdy and are well grown, will prove very useful for cutting from in the early summer months.

**WINTER CUCUMBERS (M. D.).**—You had better obtain plants that are now established in 48-sized pots, as plants raised from seed sown at the present time would not have time to make strong growth before winter. If the trellis can be pretty well covered with growth made under the influence of light and sun it will be much more fruitful in character, and will be better able to resist insect attacks than growth that is made during the shorter days and longer nights of autumn. It is extremely injudicious to crop to any material extent Cucumbers in the autumn that are intended for producing fruit in the winter.

**FIGS IMPORTED (L.).**—The value of the imports varies considerably. Thus the value of Figs imported from Italy in 1872 was £20,723, while in 1876 the value of the imports was only £5682; and the Spanish imports, which are about of the same value, are subject to the same fluctuations. The value of Figs and Raisins imported from Turkey in 1876 was £630,074. If you send 3d. in postage stamps to the publisher and ask him to send No. 884 the number of the Journal you require will be posted to you.

**CONIFERS FOR SCREEN (D. W.).**—Probably the American Arbor Vitæ (*Thuja occidentalis*) would be suitable, as it is quick in growth and good-sized specimens can be purchased at moderate cost. *Cupressus Lawsoniana* would also be suitable, as also would *Thuja Lobbi*. We do not know of a better berry-bearing evergreen for covering a wall than *Crataegus Pyracantha*. The Pinks to which you refer flower well in the small pots, but you may shift them if you prefer into larger when they spindle for flowering.

**TRANSPLANTING ROSES IN SEPTEMBER (Midland Counties).**—As you must either dig up the Roses on the 29th inst. and chance their succeding afterwards or leave them behind we should certainly choose the former alternative. The day before digging them up cut off a great portion of the summer's growth—that is, shorten all strong shoots and thin out such wood that is not wanted for next year's growth and bloom, and also cut off a great portion of the foliage (not tearing it off, which might injure the bark or buds) so as to lessen evaporation of the tree's juices. Have plenty of wet straw or hay in readiness, and in this envelope the roots, and if the tops can be kept moist also so much the better. On arrival at your new garden lay them in by the heels carefully, covering the roots on a shaded border, and water and sprinkle them frequently, and plant them in their permanent positions any time after October. By adopting this practice you may save nearly or quite all your Roses.

**MIGNONETTE FOR SPRING FLOWERING** (*M. D. Surrey*).—If seed is sown now and the plants are well managed they will be very valuable for decorative purposes in late spring. Clean well-drained 5-inch pots should be employed, the soil—lumpy loam with a little charcoal or lime rubbish and much decomposed manure—being pressed into the pots very firmly, almost hard. Sow the seed thinly, and subsequently thin out the plants, leaving about half a dozen in each pot. Water must be given with great care, and less of it will be necessary if the pots can be plunged in ashes. A very light frame or pit on the south side of a heated plant structure or forcing house is a suitable place for wintering Mignonette, employing such protection as may be necessary during severe weather.

**GRAPES SCALDED AND RUSTED** (*One in the North*).—The Grapes are good and well flavoured, but are quite unrepresentable at table. Various causes contribute to produce what is known as rusting of the berries; but in this instance there can be little doubt that at some time when the Grapes were young, it may have been on a Sunday morning, the house has been left closed until the temperature was too high and the ventilators have been thrown open somewhat widely to reduce it, and the onward rush of warm air and the sudden and excessive evaporation from the berries injured the then tender cuticle.

**NAMES OF PLANTS** (*R. P. O.*).—*Habrothamnus fascicularis*. (*W. P.*).—The finely divided frond is *Chelanthus Borsigiana*; the other is *Polypodium longissimum*. (*W. D. H.*).—The pink flower is *Godetia Witneyi*, the other is *Isula Conyza*. (*C. S.*).—*Cimicifuga serpentaria*. (*G. H.*).—*Populus alba*. (*A. C.*).—1, *Spiraea callosa*; 2, *Rhus speciosa*; 3, *Sambucus Ebulus*; 4, *Sanguisorba canadensis*; 5, *Erica vagans*; 6, *Hypericum perforatum*. (*M. M.*).—The white flower is *Achillea Ptarmica* fl. pl.: the yellow one *Solidago rigida*. (*G. C.*).—The plant you know as Weebie is *Seneio Jacobaea*, the common Ragwort. In Lancashire it is called Kettledock, a corruption probably of *Cattle Dock*. (*A. A.*).—1, *Gasteria verrucosa*; 2 is a *Calanthe*, probably *C. veratrifolia*. (*Cranfordian*).—*Gnaphalium lanatum*.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### THE SUMMER GRAZING OF SHEEP.

We have on various occasions in these columns referred to the plans of feeding sheep in the summer months under the varying circumstances applicable to the best known systems of sheep management, except that of feeding them upon grass only or nearly so, and our present subject will therefore relate principally to the feeding and fattening of sheep upon pastures or field grasses. We have in various districts of the kingdom grass land sufficiently rich to feed bullocks fit for the butcher without any other food but the grass, and in such cases sheep are often part of the stock; but they are rarely used for feeding sheep alone for the butcher, the bullocks being found more profitable than sheep upon such pastures. There are, however, to be found in almost every county pastures not capable of feeding bullocks without assistance, and which may be called second-rate grass lands, yet they are equal to feeding sheep for the butcher, and more particularly is this the case with certain breeds of sheep. The various breeds of Downs and other short-woolled sheep can seldom be made fat upon grass alone; upon the other hand, the long-woolled sheep, such as the Cotswolds, the Leicesters, Devons, and Lincolns, together with some of the best bred Oxford and Shropshire Downs, will graze-out fit for the butcher upon grass without artificial food, all of these being of a quiet and contented habit and disposition. To illustrate our observations we will introduce an experiment tried several years ago upon some fen lands, whereby Devon long-woolled sheep were placed in pastures in company with some Hampshire Downs. The latter made but slight advance in laying-on flesh, whereas the former gained in weight and quality very quickly, and when the long-wools became ready for the butcher the Hampshires on being weighed had gained but very little. Another lot of Devon Long-wools were placed in the pasture after the first had been sent to be killed, and these also became quite fat and were slaughtered; but still the Hampshires remained and only advanced very slowly, and eventually had to be finished-off by winter feeding. This experiment teaches a lesson which every home farmer should know, that Down sheep do not pay for grazing on rich pastures, and that it is difficult to make them fat enough for market thereon without the aid of cake or other feeding materials.

On some of the driest and sweetest pastures we have noticed, not only in Buckinghamshire but in other midland and western districts, that it is customary to keep the Leicester or Cotswold ewes, and particularly upon farms without any or but very little arable land, and these ewes are fed chiefly during the autumn and

winter months upon grass, and in midwinter upon hay only or nearly so. By this system of feeding they seldom suffer much loss at lambing time, which by arrangement takes place in March and April, just in time for the ewes to receive the first bite of grass, and by having a pen occasionally shifted with troughs containing cake and artificial food for the lambs the ewes will give abundance of milk, and make their single lambs fit for market in ten weeks, and the twins at twelve or thirteen weeks old. The ewes of full age after the lambs are gone, having the run of the best and freest grass, will be ready for slaughter by Michaelmas, for it must be remembered that these long-woolled stock fatten very quickly, and, moreover, if made too fat by extra or winter feeding become very heavy, and consequently less saleable in the market. Upon what may be termed second-rate grass land to which we have just been alluding, it is sometimes the custom to purchase tegs just over a year old of the long-woolled breeds in the months of March or April, and graze them out fit for the butcher soon after shear-time, and about the last week in June; and if they have been carefully managed, and particularly if they have had about half a pound of cake or cracked beans per day, they will at the time named be found quite fat enough for summer mutton. Second-rate grass land, too, will bear the improvement resulting from the use of cake, &c. To provide for another flock to feed off after the first has been sold, it is well to try more tegs or maiden ewes in good condition about the month of May, so that they may be fed in the same manner as just described, and become fit for slaughter in October. The second lot will pay for a pound of cake or beans per day after the 1st of September when the nights get longer; they will then be in good saleable condition and be sold out of grass, because we have been alluding to the feeding of pastures where no arable is available for winter feeding. We must now remind the home farmer that in feeding first quality of grass land it often lies flat and is frequently strong land, so that in a wet summer the water does not escape so quickly from the surface as may be desirable. In a showery summer the grass would be abundant, rich, and forcing, but it is in such seasons and under such circumstances where the land is not drained, that sheep frequently take the rot, except on salt marshes, and if not killed very shortly after it is discovered they may become unsaleable and perish, as large numbers have done for several years past upon some of the richest grazing land in various districts. It is, therefore, very desirable to a certain extent to anticipate this disease in a wet summer always to have rock salt within reach, and make use of cracked beans as part of the daily food, and take the sheep at night to the highest and driest ground upon the farm. The beans will serve to counteract the effect of a large amount of water taken into the system in grass feeding, and if not entirely preventing the disease of the liver, will at any rate make the sheep fit for market earlier and thus evade the injury. It must, however, be quite understood that we do not advise the grazing of sheep upon the best land, because we think bullocks would fatten and pay better, or with only a few sheep grazing with them, say one to a bullock.

We have in this case purposely avoided any allusion to the feeding of sheep on mountainous or chalk hill pastures, because these pastures are incapable generally of what we call grazing sheep—that is, to make them fat, such lands being adapted only for the feeding of breeding flocks or store sheep. The observations we have been making applied to the long-woolled sheep, and amongst those we have alluded to we intentionally omitted to mention a breed of sheep called the Romney Marsh breed. These are long-woolled and quite distinct from the others named, and for a long series of years had been bred without crossing, with the view of their being enabled to withstand the storms and wind peculiar to the extensive fens and pastures on the south-eastern coast of Kent denominated Romney Marsh. It is nearly on a level with the sea, from which it was reclaimed many centuries ago, and is preserved from encroachment by means of dykes, &c. The native breed of the district were originally large coarse animals, but have lately been extensively crossed with the new Leicesters and greatly improved, and will consequently yield to superior management of feeding, &c. The old system of the Romney breeders was to send their lambs to the farmers on the uplands to be kept during the winter, returning to the marshes to be grazed during the summer; but during late years they have retained their lambs at home and feed them in part with the produce of the arable land where available, and keep them in store condition only until the grass is fit for feeding. Indeed they usually run out daily into the marshes to get a scanty mixture of food whilst receiving roots, &c., in the yards or night pastures. These marshes are almost entirely a grazing district and do not furnish hay of a desirable quality, because close feeding for a long period has destroyed the finest herbage, leaving chiefly hard wiry sorts of grass, unfit for hay and only adapted for grazing whilst young and growing. The fattening quality of the herbage varies very much; but in some of the rich soils, denominated "quick land," requires to be heavily stocked in a favourable season, otherwise the grass gets long and injures the future pasture. Some of the best land will carry from five to seven

sheep per acre and make them thoroughly fat. On the highest and weakest pastures breeding flocks are kept, and the lambs reared serve to supply the best pastures with stock. It is rarely that any other sort of sheep are fed on the marshes on account of the climate, as farmers assert that their stock is the only breed which will endure the winter experienced in this marsh district, which extends about fourteen miles by ten. Before quitting the subject we must advise the home farmer never to buy sheep low in condition for grazing on pasture land, and if so circumstanced it is better to breed all they require and feed all they breed. At the time of selling many men of experience will estimate the dead or carcase weight of their sheep very closely, but it is well to have a weighing truck at hand and weigh the animals alive. In that case there is a certain amount of judgment required to estimate the carcase weight as compared with the live weight. It is, however, fair to calculate that a moderately fat sheep will yield 58 per cent. in mutton compared with the live weight, but when the animals are thoroughly fat and when fasted before weighing they will yield 64 or 65 per cent. of mutton and sometimes rather more. In feeding sheep on rich pastures, these animals suffer frequently from foot rot, which unless properly treated at the onset will often prevent them from fattening, particularly in wet summers.

#### WORK ON THE HOME FARM.

*Horse Labour.*—Horses will be now principally engaged in working the reaping and mowing machines. In a few of the earliest districts the winter oats, peas, early white oats, &c., in districts where the weather has been fine will have been carted to the stack. In some instances in favoured counties a considerable acreage of wheat will have been carted, and more being now nearly or quite ready for stacking, will consequently employ all the horses in the intervals of fine weather. The second crops of clover also must soon be cut, unless it is thought advisable to leave it for seed; and this may be worth while in a late season like the present, for it will lessen the pressure of labour at the busiest time, and clover seed is likely to fetch a good price next year. On the other hand, if the weather should prove fine and the hay can be well made, there will probably be a great demand for it next winter, in consequence of so much hay having been damaged and, in flooded districts, some entirely lost. We have noticed a large quantity of pasture and meadow hay this year which has been so much damaged that it is a question whether it should be got up as hay at all, as the expenses attending it must have been very heavy and the value not equal to well-saved straw, even when it has been carted dry. There is, however, an alternative adopted by some farmers in case the hay is seriously damaged—that of spreading it on the land for manure; in fact, we know farmers who, if they get a light cut of grass, often spread it over the land, allow it to settle down on the surface, when the worms will draw it into the land, and this plan is adopted instead of using manure in the ordinary way. This system, however, would not answer upon irrigated meadows or fertile pasture, not only because the land does not require to be manured, but also because the bulk of the grass when cut for hay would be too great if spread to sink into the ground properly, and would moreover impede the second or autumn growth. It must be after all a question of policy, reckoning expenses on the one hand and its value for manure on the other hand. The odd horse or horses should at all possible intervals be employed in the interculture of root crops, for in many districts it has been quite impossible to keep the crops whilst young properly hoed and cleaned, or even singled out in many instances, and where this was the case at the commencement of harvest the labour of either men or horses could not be spared conveniently for such work.

*Hand Labour.*—All will now be chiefly employed in harvest work, and it is particularly desirable that the ricks of corn and pulse should be thatched immediately they are made, as a sudden thunderstorm will greatly damage an open rick. This work may be easily done if the straw, as recommended by us for several weeks past, has been drawn and piled ready for use. Every farmer, however, ought to have a thatcher always ready upon the farm, and not trust to thatchers, who often pass from farm to farm and do the thatching at their own convenience. We have induced many men in our time to learn thatching work, and they have proved advantageous to the home farmer and to themselves by earning good wages. As fast as the corn is cut the grass on the banks and borders may be cut the second time, the first cutting having been removed and disposed of in the months of May and June. We were speaking with a farmer a few days ago who occupies about three hundred or four hundred acres of arable land chiefly, and to whom we recommended this plan of cutting the grass, weeds, &c., on the banks and borders of the fields, and he informed us that during the whole summer since he left root-feeding that he has fed twenty-five Shorthorn dairy cows with produce of the borders only as green fodder, allowing them in addition 4 lbs. of cake each per day, and that he has sent all the milk to the metropolis, and has had an abundant quantity up to the present time. We note that the barley crop this year is much overgrown with clover where it was seeded in the spring. Now this is not only very much against the harvesting of this crop, but

also very injurious to the barley whilst growing, for the clover competes so strongly with the barley as to reduce what would otherwise prove a plump sample, fit for malting, to a thin light grain only useful for grinding into meal for feeding purposes. We have seen many fields of barley this year cut and carried to stack the same day in good condition where the barley had been sown after wheat; but this could not have been done if clover seed had been sown in the barley.

Trifolium should be sown on the first opportunity, and we advise the home farmer this year to plough the land instead of sowing on the stubbles and working-in the seed. When, however, the land is ploughed it should be pressed, also heavily rolled twice over with the ring roller, and sown after the roller, as the seed then falls into the little channels made by the rings of the roller, and it is then not only easily buried by harrowing by the chain harrow but it finds a tolerably firm bottom to root in, so desirable in the cultivation of trifolium.

#### POULTRY FARMING.—No. 6.

WE proceed to give a few more hints on the establishment and management of poultry on a large scale, which we failed to compress into our last article.

1. As to commencing poultry keeping. We should advise a beginner not to start with anything like the number of laying hens that he intends eventually to keep. All the runs destined for breeding birds, or nearly all of them, may be filled up; but as we recommend that none but pure-bred birds be purchased for laying, it would be too costly to start with an entire stock of these bought at 5s. or more each; even if it were wise to launch out at once on so large a scale the greater part of the stock must be home-bred. Those which are required at once must be procured from breeders of high-pedigree stock; they nearly always have plenty to part with at moderate prices, deficient in some trifling points of form or feather. This is the real use of breeding high-class stock—viz., that the yards of the many are improved by the fancy and labour of the few. Cross-bred birds are extremely useful in their way, but they should be home-bred. Even after the establishment is in working order the pullets of kinds specially required for laying, but which are not good for the table, should still be bought annually—e.g., Brahmas and Cochins. Every theory as to distinguishing between those eggs which will produce cocks and those which will produce hens has been proved absurd by repeated experiments; there is therefore no method of controlling the product, and the rearing of a number of cockerels unsuited to the poulterer would be a loss.

2. On the special management of the laying stock there are a few things to be said. Those who have written on poultry as farm stock, and who have calculated, erroneously as we think, that enormous profits are with little difficulty to be made by the occupation, generally advise that all the laying pullets should be killed at the end of their first laying season. There is something to be said in favour of this system—viz., that all expense of keeping birds through the unproductive moulting season is thereby saved, and that the hens are killed at a stage when they are far more edible than they will ever be again. In spite of these arguments we recommend that they be kept through two seasons. We have always found hens lay quite as many eggs in their second season as in their first, and much larger. The difficulty, too, of finding a good market for two-year-old birds, strange though it may seem, is not at all great. In many places thousands of such are bought up at farms for large establishments. We have vivid recollections of the never-failing supply of "fowls" in our own University, which were evidently of this class, and we hear that in our neighbourhood the farmers' wives find a readier market for such birds, and even much older ones, than for spring chickens, for the supply of a military college. We have often in articles on the management of breeding stock inveighed strongly against the use of heating foods. Such observations, however, do not apply to hens kept solely for laying, and destined to have but a short career; from these the great object is to get as many eggs as possible in their two years, and we should through all cold bad weather mix Spratt's patent food, according to the directions we have frequently given, with their other food. Those of the sitting kinds which we do not require for rearing autumn chickens we should leave on the nest a fortnight if they become broody, as probably all will in August or September. The rest causes a rapid moult, the bird recovers far sooner, and lays much better in the winter than if it were kept laying by artificial means. As we have before said, an observing and intelligent person will discover if any of these hens show peculiar excellence as layers, and move all such into the superior order of breeders.

3. The general management of the breeding stock should be such as we have often prescribed for well-bred poultry. In the first instance a far more liberal price must be given for them than for those which are looked upon solely as egg-making machines. When hens show peculiar merits as layers or producers of fine stock they may be kept through a third season, mated with robust cockerels; we should not advise any but Game cocks ever being kept over two years. All breeders and layers alike must have

abundance of mortar or bricklayers' rubbish. When hens are kept in small numbers and at complete liberty they procure for themselves by diligent search the necessary materials for the formation of eggshell; when they are in large numbers or at all confined these substances are soon exhausted, and the supply of eggs depends much upon their being provided. Any observer of poultry will have seen the distressed craving with which a laying hen in confinement rushes at broken crockery or a crumbling wall. Those continental regions from which the largest supply of eggs comes have almost always soils rich in calcareous matters.

4. On the rearing of chickens for the market on a large scale volumes might be written. We can here only attempt to give a few headings of points on which an inquirer should take pains to inform himself well, and refer generally to many articles on chickens through their various stages, which have appeared in our columns as the seasons came round. Those who rear poultry for the consumption of their own household are generally content with chickens through the greater part of the year; a breeder for the market must have them ready all the year round, so as never to fail his customers. Of course those reared during the inclement seasons cost more in time, trouble, food, and losses of a portion of them before they are fit to kill their spring and summer chickens, but the extra expense is well repaid by the high prices they fetch. For autumn and winter setting we recommend the eggs from a first cross in preference to those from the pure-bred stock, the chickens are more vigorous and are fit for the table much sooner. We have always observed that the produce of crosses grow quicker in their early days; that of pure-bred stock continues to grow much longer. The latter are therefore best suited for fattening up to enormous size when six or eight months old, the former for killing at from eight to sixteen weeks old. The intending poultry keeper should not fail thoroughly to study the comparative merits of the many incubators and artificial mothers now offered to the public. Those heated by hot water and not by lamps seem by far the most easy of management and less apt to fail through accidents. We have not yet had the opportunity of trying any of the most modern incubators, but hear on all sides of astonishing success with Christy's. It would be well worth while, however, to try several, and carefully to compare the results before attempting a poultry farm. The time, and trouble too, saved by artificial mothers must be immense. We should recommend one to hold about eighty chickens. One of the acre runs would accommodate these till they were fit to kill, or the pullets which we may roughly estimate at half the number, for some months after the cockerels were killed off. Directly the run is emptied it should be well limed if of grass, and left vacant till the grass grows strongly again, or immediately dug over if intended for the cultivation of vegetables.

On the food of chickens we have before written much. We have always found the flesh of those reared chiefly upon ground oats, such as is used in Sussex, the best. Ducks by no means require such delicate fare as chickens, but the whole method of rearing them is so different that we will soon devote a separate article to them. We believe that the best information on the preparation of first-rate table poultry is only to be procured in France. The exact time necessary for the fattening of birds of different ages, the changes of diet during the process, the advisability and method of caponising, would be better learnt in some such establishment as that at Gambois near Houdan than in any English yard, and a visit to some of the great French breeders would not only pay well but be absolutely necessary for any would-be large cultivator of poultry in England.

We have described some of the difficulties and risks of wholesale poultry breeding. We have shown to the best of our powers how far they are in our opinion surmountable or avoidable. We repeat what we said before, that we believe no attempt at poultry farming on intelligible principles has been fairly made in England, and we should much like to see one so made.—C.

### VARIETIES.

At the Council Meeting of the Bath and West of England Society and Southern Counties Association held at the Grand Hotel, Bristol, Sir J. W. Walrond, Bart., in the chair, the report of the Committee appointed to take into consideration the Society's relations with county local associations in its districts, with a view to a uniform system of co-operation with them, recommended amongst other proposals that the exhibitions of the Society be so distributed as to insure, as far as possible, a regular and general diffusion of their advantages. On the motion of Colonel Luttrell, Chairman of the Stock Prize Sheet Committee, the sum of £2070 was granted for prizes for stock at Worcester in 1880, being the same amount as at Exeter. Mr. R. H. Bush, as Steward of Poultry, obtained the sum of £225 for prizes in his department at Worcester; and votes for Music, Horticulture, and Art Union were, on the motion of the respective Stewards, granted on the same scale as at the Exeter meeting. A communication was read from the Tunbridge Wells Farmers' Club, asking whether the Society would be inclined to entertain an invitation from the neighbourhood for the meeting of 1881, and the Secretary was

directed to reply that the invitation had been favourably received by the Council, but no conclusion could be arrived at until they were satisfied that the various requirements of the Society as to the site and other matters could be complied with.

— THE Cottage Garden Show held at Great Hadham, in the pretty rectory grounds, by the kindness of the Rev. Dr. Gifford, was highly successful through the efforts of its enthusiastic Secretary, Mr. C. Gayton; so much so as regards honey, that the Rev. Herbert Peel remarked in his speech at the prize-taking that the collection of honey was better than any he had previously seen during 1879. In supers both first and second prizes fell to Miss Gayton, the Secretary's sister, who seems to be the apostle of advanced apiculture for the district. In run or extracted honey the competition was keen, eleven entries being made, and it is curious that the Judges accurately separated the extracted from the run in each case. In competing skeps the prize frame hive fell to a very good specimen weighing 87½ lbs. Manipulations were carried on in the tent during the afternoon.

— THE *Mark Lane Express* refers as follows to the harvest and the crops:—"In Scotland many of the fields are still quite green, a precarious state of affairs which causes agriculturists much anxiety, as, even if the days prove fairly dry, the ripening power of the sun is rapidly diminished as autumn progresses. Both wheat and barley will prove exceptionally deficient in point of yield; but the continuance of dry sunny weather may do something to improve quality and condition, and a fair crop of straw will probably be secured, which is a matter of importance to stock owners, seeing how much of the hay has been lost. Potatoes have suffered from disease more or less throughout the kingdom, a recent advice from the midland counties stating that many acres have been ploughed in, so that this valued esculent may be considered to have disappeared from its place in the list of the season's crops. Mangolds, Swedes, and turnips have improved slightly during the past few days of fine weather; but the root crops generally are backward, foul, and unpromising."

— THE Incubator Tournament at Hemel Hempstead, in connection with the Poultry and Pigeon Show to be held on October 1st and 2nd, commenced on Tuesday. The conditions of the last year's competition of incubators were that one person without experience should take charge of and work all the machines entered, so as to determine which was the simplest and best adapted for use by the uninitiated. The result was in favour of Mr. Thos. Christy's machines, which took first and second prizes. This year the conditions are that each machine shall be worked by an expert under the strict personal supervision of the Committee. Seven incubators in all are entered under these conditions, and on Tuesday morning the Committee proceeded to mark the eggs, which was done by assigning to each member the eggs intended for one incubator, the member writing in ink his name and the number upon each egg; this to prevent mixing, loss, or replacing. The eggs were then placed in the incubators at twelve o'clock precisely, and the competition commenced, to extend until October 1st—the regulation three weeks—science not having been able yet to shorten the work of Nature in this respect. The machines entered are those of Messrs. Christy's, Howell's, Cashmore's, and Watson's. Twice a day the exhibitors have access to the machines, under supervision of the Committee, and the results are being awaited with interest. No entries for Pigeons and poultry will be received that are not posted on Saturday next.

### PRESENT MANAGEMENT OF APIARY—UNITING STOCKS—QUEENLESS HIVES.

THE low temperature of the now bygone summer has prevented the formation of saccharine matter in plants in its usual amount, while wet has too constantly prevented the poor bee from gathering the little honey secreted. The past unfavourable season besides has been a successor to a severe protracted winter which had exhausted both bees and their stores. As a result it is much to be feared that immense numbers of stocks in the hands of the less careful or less instructed will die during the period of cold, which is already warning us of its approach. The remedies to be applied in the present bad condition of things are principally two—uniting and feeding; upon the former of these let me now say a few words.

*Uniting Stocks.*—As experience grows so, I think all advanced bee-keepers will admit the value of that golden rule of apiculture, "Keep your stocks strong," is more clearly seen. There is no mistake which is occasioning so many losses and which is hindering so much the productiveness of small apiaries as that of looking to results rather in the number of stocks than in their condition. That a few bees may by attention and feeding be worked into strong colonies when the spring is with us is indeed true, but at this advanced period of the year to hold to little weak stocks because they can be counted as stocks is to court disaster. Not only should we unite the very poor and weak, but we should satisfy ourselves that our hives all contain fertile queens, for the production of which this year has been most adverse, my experience being beyond precedent disappointing,

failures actually exceeding the number of successes. With frame hives a simple inspection will be sufficient; nor need the queen be actually seen, the presence of worker brood, the sealing of which, be it remembered, is nearly flat, being itself sufficient evidence of the presence of an impregnated mother. Brood sealed with very prominent convex caps, if it be in worker cells, will proclaim, however, a drone-breeding queen or a fertile worker, and steps will have to be taken to cure the evil. This calls for a word on

**Queenless Hives.**—The absence of queens will be now, as in most cases, indicated by the presence of drones, for queenless stocks do not on the failure of honey, like others, kill these, to them, useless consumers. No queen being present brood and eggs will not be found, and such should be set aside for uniting. With skeps the examination can hardly extend beyond puffing smoke into the entrance and then inverting. More smoke, and drawing the combs gently apart, will enable us to determine whether sealed brood is present, while the weight must decide as to the amount of honey contained. Having determined which stocks are to winter and which are to be broken up for strengthening others, we arrange the plan of union. If we are using skeps we should remove by drumming the bees from the broodless hives, adding them to those containing developing young, so that these be not lost; but, *ceteris paribus*, it is wise to elect the skeps in best condition and those with the cleanest combs for standing. These arrangements made, we begin by drawing nearer together daily those stocks that are to become one, or to be married as some say. If many hives are near the removals must be made by small stages, or the bees will become confused, enter the wrong hives, and fighting is likely to be the result. When the two are standing side by side we commence operations with the skeps by puffing a little smoke into both. Turning them up we pour over the receding insects a gentle libation of thin syrup (thin, because otherwise it will gum the bees together); if the day be chilly the syrup should be slightly warmed, and as an additional precaution it will be wise to add to it two or three drops of essence of peppermint; but if the ensuing directions are properly followed success is certain without scenting, which sometimes tends to robbing. The skeps are now placed on their stands for the bees to gorge, and while we are preparing for the drumming we now and again give two or three smart raps on the straw sides of the hive in hand to keep up the terror of those within, and cause the gorging to go on to repletion. We now drive the bees from the broodless hive, not forgetting an occasional rap for the other. When all are up we puff a little more smoke amongst those to which they are to be added, invert them, place the skep containing the driven swarm upon them, and by a sharp smack send the evicted bees down headlong amongst the combs. In a minute or two the now empty skep may be removed and the united stock placed, propped up by a stone upon its stool, which should be put midway of the stations the two hives previously occupied. The two cardinal points in this operation, which if observed will never be followed by fighting, are these:—1st, Have both lots of bees subdued and gorged. 2nd, Introduce them to each other in mass so that they are actually mingled before they have time to make an attack. Variations may be made, such as drumming both into one skep and then throwing them down together to enter the selected hive, but this is needlessly tiresome; drumming one with the precaution given being amply sufficient, and more than this not being practicable if one be a swarm of the year.

Uniting bees in frame hives is much less troublesome. The contiguous placing of the colonies by slow marches is, as in the previous case, necessary. The frames ought to be interchangeable; if not, in addition to the directions given the brood and what may be worth saving of the combs of one stock must be transferred to the frames of the other. Use smoke and scented syrup as with skeps, and also rap for the same reason the hive sides. If a queen is possessed by both lots remove the one you think of lesser value, but if you are not expert at finding queens leave the deposition to them. Remove the stock to be broken up some few yards, shut the mouth of the hive to be strengthened, and place it between the two previous stations; put a large flat board against the door of it upon which to jerk the bees. Lift the frames out one by one, shake the bees off at the hive door at which they of course now cannot enter; remove superfluous combs, shake also the bees from other hive amongst the first, and add the brood and other frames till the stock is as fully combed as you intend it to be; shut all up, remove the obstruction to the bees entering, and urge them with more smoke. They will rush in together to agree like brother and brother. For myself I simply frighten and gorge, remove combs not needed, push the frames together in the first hive, and add at once those from the second, and never have a case of fighting.

If no frame hives are found in the apiary the pieces of brood which would be otherwise wasted may be placed in a straw cap and held in proper relative position by pieces of cork, and then stood over a hive to hatch out. In this way a stock may be strengthened with young bees to its immense advantage. Frame hives will know how to value and to utilise this all-important late brood. The question of feeding must remain till next issue.

—F. CHESHIRE.

## OUR LETTER BOX.

**PREPARING LAND FOR GRASS (G. W. S.).**—You had better work and clean the land thoroughly this autumn, leaving it well exposed to the action of frost during the winter; then in fine weather in spring work it again so as to produce as fine a tilth as possible, enrich it with manure, and sow the seeds. The presence of coltsfoot indicates that the land requires draining.

**SELECTING BREED OF FOWLS (H. S.).**—As you wish to breed for home use as well as for market keep Brahms hens and a coloured Dorking cock.

**WAXBILLS (A. H.).**—You feed them correctly. We should give the ants' eggs dry.

**PROMISE TO PAY (A Twenty-years Reader).**—The promise to pay made before a witness was an acknowledgment of the debt, and it is recoverable.

**FEEDING BEES WITH BARLEYSUGAR (H.).**—The best method of supplying it is at the top of the hives or boxes. Tie a dozen sticks of it together, and, after opening the hive at top, place the barleysugar over the opening, covering it with a garden pan or flower pot, and just before it is all consumed give a fresh supply in a similar way. When hives cannot be fed at the top the barleysugar may be inserted in the entrance at the bottom of the hive.

**FOUL BROOD (Caralao).**—In our previous reply we stated that although a definite opinion could not be pronounced upon the case by simply examining the combs with the unassisted eye, yet the odour was such as to arouse serious suspicion which the microscope unhappily confirmed, as the brownish matter was full of micrococci. You now tell us that another authority, to whom you submitted a like specimen, answers, "There is no sign of foul brood." Perhaps not to the superficial observer; but as we carefully went through the case and found tens of thousands of micrococci germs with the accompanying minute fibrils, we can only assert our previous position—that the specimen sent was undoubtedly foul broody. If the combs in the brood nest of the hive under remark are examined there can be little difficulty in determining the extent of the disease, which if but slight may be eradicated by the spray-producer and feeding with salicylated syrup, the honey previously having been removed by the extractor, which we learn by your letter has already been used upon the hive in question and so, we fear, tainted with the disease. It should be very carefully cleaned before healthy combs are put into it. But if the disease has great hold it will be better to take all honey and build the bees up with foundation and feeding in cleaned hives, uniting them or not according to their present strength and condition.

**WHITE GRUBS IN HIVES (T. B.).**—When bees are on the verge of starvation, instead of continuing to use their spare stores on brood-feeding until all is gone, they consume the eggs already laid and eat up the smallest grubs, proceeding to suck the juices of the larger and carry the residue from the hive. They now tear open the cells of the chrysalides, first the drones and afterwards the workers, puncture their bodies, feed on their juices, and carry the "white bees" as they are often called from the hive. White bees about a live door then are a sign of severest pinching, and the remedy is clearly feeding. Before these "white bees" are seen, however, great mischief has already been worked, as a prolonged check has been put upon the production of young bees.—F. C.

**ERADICATING RATS (C. W.).**—In your case as the rats are in a bank we should employ a ratcatcher occasionally who has well-trained dogs and ferrets, and more rats would be killed in a day than your man can shoot in a year. You might have a ferret of your own, which if permitted to traverse the rat runs once a week would probably cause a great number of rats to seek fresh quarters; but we should first employ a man as recommended, and have as many of the rats killed as possible.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.						Rain.
1879. Sept.	Barom. at 32° Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		In. — 		

## REMARKS.

3rd.—Cool slightly misty morning; warm, bright, and sunny day afterwards. Clear moonlight night.  
4th.—Misty autumnal morning, fine and bright from 8 A.M. till 1 P.M.; dull and very cloudy afternoon; fine evening.  
5th.—Damp close morning; fine afternoon with little sunshine; fair evening.  
6th.—Very thick and dull all day; fog in evening.  
7th.—Bright in early morning, overcast from 9 A.M.; showery from 2 P.M. till 4.30 P.M.; bright fine evening. Gustly wind.  
8th.—Fine day, at times rather cloudy; clear starlight night.  
9th.—Showery day; heavy shower at 1 P.M. and 6 P.M., intervals of bright sunshine during the day; very high gusty wind; cloudy evening and calmer. Clear at night.  
Slightly warmer than the previous week, and in fact nearly of the average temperature for the first week of September.—G. J. SYMONS.

## COVENT GARDEN MARKET.—SEPTEMBER 10.

THE supply of fruit arriving now is almost entirely from abroad, large quantities of Grapes still reaching us from the Channel Isles, the supply of home-grown being very limited.



## WEEKLY CALENDAR.

Day of Month	Day of Week	SEPTEMBER 18—24, 1879.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.	
18	TH	International Potato Show at the Crystal Palace.	68.3	46.5	57.4	5 41	6 8	8 50	6 27	2	5 49	261
19	F		67.3	45.3	56.3	5 43	6 5	10 19	6 55	3	6 10	262
20	S		68.0	44.0	56.0	5 44	6 3	11 46	7 31	4	6 31	263
21	SUN	18 SUNDAY AFTER TRINITY.	64.4	45.8	55.0	5 46	6 1	1 4	8 19	5	6 59	264
22	M	Boerhaave died, 1738.	66.4	44.7	55.5	5 47	5 58	2 7	9 22	6	7 13	265
23	TU		66.3	45.7	55.9	5 49	5 56	2 55	10 36	7	7 34	266
24	W		66.1	43.5	54.8	5 50	5 54	3 29	11 54	8	7 55	267

From observations taken near London during forty-three years, the average day temperature of the week is 66.9°; and its night temperature 45.0°.

## VINES IN POTS AT COMBE ABBEY GARDENS.

**R**EADERS of the gardening papers are well aware that Mr. Miller, the gardener at Combe Abbey, is a noted grower of first-class Grapes, and most people when visiting these gardens expect to see good results. During a recent visit I saw as good a crop of Black Hamburgs as anyone could wish—fine large berries, and a regular crop of good-sized bunches, all thoroughly well finished. I think it is generally admitted that to be a successful grower of any one kind of fruit it is always necessary to keep renewing the borders, and at Combe young Vine-planting and replanting is the order of the day. In fact, as in everything else, to be successful a gardener must try every means in his power to keep the plants healthy. No standing still will ever win a gardener much credit for his productions.

In one of the vineries I noticed a fine lot of strong healthy pot Vines, well-ripened plants ready to produce an early crop next year. Mr. Miller told me the eyes were not inserted before April this year! a fact of which he hoped to show me ample proof before I left the vineries. I must admit I was inclined to laugh at such an assertion, seeing the Vines were so healthy and the pots so well filled with roots. I cannot do better than explain the whole operation as nearly as possible in Mr. Miller's own words, merely noting that I never saw better pot Vines even from cut-backs.

"In the spring of 1878 it was necessary for various reasons to replant a vinery. For this purpose I had in the autumn prepared some Vines by laying them on some wattle framework, so that in June, when I purposed planting, I could move them into their places without much disturbance of their roots. The spring of 1878 was cold and wet, so that these Vines made but a poor start, and I did not feel justified in planting the vinery with them as I had intended. I had no other young Vines, and there appeared to me no way out of the difficulty but to purchase the required number of young Vines from a nursery; this for various reasons I was very loth to do. It so happened that during the season of 1877 I had encouraged from near the base of our stronger Vines a number of shoots; these were trained horizontally along the front glass of several of the vineries, and they appeared very strong towards autumn. I had no particular object in growing these shoots in this manner at the time; they might have been fruited along the front, or they might be cut away. It so happened that at pruning time they were left and trained along the front. About the middle of April, when I was in a dilemma to know what to do for Vines to plant my house, these rods were breaking beautifully, and the shoots or laterals, which were very fine, were making straight upwards. After looking at them a time or two rather covetously the idea occurred to me to layer them. For this purpose a number of 10-inch pots were filled with loamy soil and placed in rows under these shoots, which were pegged firmly to the surface of the pots, a handful of loam was then heaped over the base

of the laterals and along the horizontal rods to the extreme edge or tips of the pots. This done, our experiment so far was at an end. We did not have to wait long for the result, for in about a week an abundance of fine white roots were seen protruding from the base of the laterals and along the rods to the extreme edge of the pots. Meantime the growth of the lateral shoots took such a bound that no one except those who had an opportunity of observing would have believed it. I was now satisfied in my own mind that the experiment was a success. Whilst these Vines were so preparing we busied ourselves by replacing the old effete border by a new one, and by the time this operation was finished the Vines layered as described were thoroughly rooted, and, having been for several days cut away from the parent stem, were finally planted in the newly-prepared border; some of them reached beyond the top of the house the same season. In the winter they were cut down to within a foot of the ground; they are now splendid rods quite up to the top of the house, after having been stopped several times. So fruitful were they, although being cut so closely down, all of them would have carried three or four bunches of fruit. Referring to the labels in the pots I find that some of the canes were layered on the 23rd of April and the young Vines cut away on the 25th of May, and others in more or less time. Herewith is a sketch (see fig. 26, page 232), which shows pretty clearly how the operation was performed. The whole affair is so practical and so simple that but little explanation is required. The pot Vines raised in the same way this year are very strong and are now ripening out of doors. I have a few rods prepared this year to yield me a good crop of plants next year."

The pots as shown were placed on a plank to bring them near the glass and keep them level and steady. Time is everything to those who have to produce a great deal from a limited quantity of glass. This system of producing young Vines in a few months is undoubtedly a step in the direction of progress; it may be capable of improvement, but to me it seemed so genuine a system and so simple that I need make no excuse for bringing it under the notice of your readers. Mr. Miller is one of those energetic men who well deserve the thanks of all members of the craft, and if this system which I have tried to lay before your readers has any merit, which I undoubtedly think it has, all the credit belongs to him.

It has occurred to me that this system might be considerably extended by nurserymen and others who grow pot Vines largely every year. Why should they not try a house planted out permanently with Vines and so layer them, and thus secure fine Vines in a few months, instead of having to grow their Vines two years in pots as at present? A crop of Grapes might also be had at the same time. With these few remarks I will leave the readers of your Journal to think this subject over, and I feel sure the Editors will be pleased to receive any practical remarks on this, to me, most interesting subject—the more extended cultivation of the Grape Vine.—JAMES SMITH, *Gardener to the Earl of Rosebery, Mentmore.*

[The advantages of Mr. Miller's mode of raising Vines

are apparent, and the usefulness of the system will be admitted by all practical cultivators.—EDS.]

### ROSES.

MANY times during this wet summer as I have wandered in my churchyard, where I have for two years been struggling to make a collection of herbaceous plants, and have seen the miserable bedraggled condition of these plants. "Plenty of cover but no game," as Canon Hole has it in his "Book on Roses;" plenty of foliage but no flowers. As I have gazed with mournful eyes at Irises, Pyrethrums, Potentillas, Helianthemums, herbaceous Asters, Phloxes, and Delphiniums decaying and dying away in the pitiless rain and high winds—as the memory of the large sum of money spent on these plants recurs to me I look for comfort or consolation to another flower—my first love, my earliest friend; and here and there on plants so weak that no nurseryman would send them out from his establishment, bravely fighting against the wind and rain, are blooms of Roses which, if not fit for an exhibition stand at one of the metropolitan shows, can still hold their own at the local ones, there once more comes across my mind the conviction, "After all there is nothing like the Rose." Yes, the Rose is still the "queen of flowers" in my eyes, and as my genial friend and your well-known contributor, the "HEREFORDSHIRE INCUMBENT," says, Whatever hobby I may take up, the Rose and its culture, he is sure will ever be the desire of my heart, so I must and shall ever stick to the Rose. And this year, as if to punish me for my desertion (temporary and enforced indeed it is), the wet summer has demolished all my hopes and upset all my calculations as to having a succession of flowers, while the Rose, which has been neglected, alone has bloomed at all freely.

Reproaches of various kinds and degrees have also been addressed to me, all of which have borne bitter fruit. "I hear," said a lady, who visited my churchyard, in most reproachful tones, "I hear, but can hardly believe it, that you have given up growing Roses." I feebly point to five beds devoted to their culture, but she is not to be appeased. "You used to devote the whole of your churchyard to them, and now have only five beds." The old man who has attended a hundred shows with me looks sad as he cuts the grass on the lawn when the Irises are in bloom. "What do you think of these flowers, Job?" I ask, pointing to some fine English Iris. "Nothing at all, sir. I don't like them a bit. They are here to-day and gone to-morrow." I go away humbled, and find another old faithful servant at work weeding among the Iris barbata, which was then at its full (?) beauty. "I don't know what you think, sir; but I don't care anything about these flowers. There's not much in an Iris. Give me a good Rose," pointing to Alfred Colomb. And now punishment of the most severe kind is administered to me. I may deserve much, but I hardly thought I had merited this. Canon Hole has written a long article on Roses to a newspaper. He mentions all the rosarians of any note, together with their place of abode, from Land's End to John o' Groat's; and he leaves me and my county of Dorset out altogether. Nemesis has indeed overtaken me, and Nemesis of another nature. Queen Rosa has punished me in another way, but that a very severe one, for my temporary desertion. If the Canon has chastised me with whips, she has administered to me scorpions. On Sunday night after service, on getting down from the wall of the churchyard on the site of an old Rose bed—the first one I ever made, but which is now carted away—I injured my left knee so severely that I am writing in bed enduring torments, and assured by my doctor that for a week at least I must remain there. The thought of the deserted Rose and my own renegade conduct is a very bitter one, and I suffer so much that even the "PARSON'S GARDENER" would pity me, and the returning officer patch up a peace. And now repentance has come, and, as it always should be, is followed by a good resolution. I must have another try to grow Roses; if not for competition, at least for garden purposes. But what am I to do? What steps am I to take so as not to repeat the failure of the last few years?

My mind goes back to those far-away years when I once won first prizes. I shall always remember with pride that one year when I first showed at the Crystal Palace. I obtained two first prizes, and only showed in two classes. Once then I defeated my friend Mr. Baker and many other giants. How did I do it? and why have I not been able to keep up this form? I had not then many Roses; five hundred would be

the very outside. I did not work half so hard then among them as I have done of late. I never watered with liquid manure. I had no means of doing this, and I did not then understand that it was advisable to use it. How, then, was it I succeeded with fewer Roses and without liquid manure? The answer comes like a flash of lightning across my mind. "Virgin soil, and that of the very best kind." Yes, that must have been it. I took away the miserable stuff, half stones and half sand, which composes my soil, and went into the lanes and got the turfy loam at the sides of the hedges, mixed this with decayed manure, and planted the Roses in this in good time, and left the rest to Nature; and although the competition was not quite so severe then as it is now, for Mr. Jowitt had not come to the front, and the Canon was then a mere beneficed clergyman whom I never had the honour of beating, yet it was sufficiently stiff for one handicapped like myself.

Next as to plants, and what stock did I buy? Well, I went to two of the great nurserymen who live on the Great Eastern line, and they supplied me with grand plants. Half were on the standard and half on the Manetti, and one did as well as the other. The seedling Briar was not then in existence, and I am free to own that when it did put in an appearance I was strongly advised (from perhaps an interested person) to have nothing to do with it. From that day to this I have never tried it except in the case of Marie Baumann, which is known to do well on it. But I mean soon to give it a thorough trial, and if it succeeds with me I shall once more put in an appearance at the shows.

And now how can I combine Rose-growing with the herbaceous plants, bulbs, &c.? for it will of course be impossible for me to give up the latter. I know many people will say "If you try so many things you will fail in all." It may be so, but still I mean to try. My idea is this: To renew the soil in a certain number of beds, and to grow Roses planted therein at wide distances. I would next plant bulbs between the Roses. In one bed I will have seedling Briar Roses and English Iris; in another Spanish Iris and Roses; next Gladioli mixed with dwarf Roses, and in another bed Daffodils; in the fifth bed Lilliums, in the sixth Colchicums, in the seventh Amaryllises, and in the eighth Phlox; all these beds to contain dwarf Roses. I shall then have a succession of flowers as well as Roses, for bulbs according to my experience, so far from doing harm do good to Roses; for the liquid manure that is applied to Gladioli when in a growing state assists the Rose at the most important stage of its existence—viz., just before and while blooming. While speaking of liquid manure I must warn brother rosarians, or rather neophytes, against the undue or excessive use of this stimulant. Roses can stand a certain amount, but if the dose be over-strong instead of doing good the manure positively kills them. Manetti Roses are much more sensitive on this point than standards worked on the Briar. This is accounted for by the nature of the roots. The Briers has strong sucker-like roots which put forth rootlets that have the same relation to those of the Manetti as whipcord has to ordinary string. Anyone taking up a Manetti Rose must be struck with the very fine silk-like roots the Manetti sends up from the base; over-strong liquid manure entirely kills these and the plant cannot grow.

Of all liquid manures night soil is the most dangerous. It is frightfully strong and burning, and can only be used with the greatest care. Being also the easiest and cheapest obtainable it is more frequently used than any other. No one has greater reason to know its dangerous qualities than myself, for I have killed I may say thousands of plants by the use of it. This year a friend of mine asked me to go and see his Roses; they were all young plants on the Manetti growing in virgin soil, and doing fairly well. He told me he had a tank full of liquid manure, mostly night soil, and asked my advice about using it. I advised him to put it on weak, and I myself superintended the mixture of it. We made it quite weak enough according to my judgment; but when I had left, the man, finding that as he began to empty the tank he found it looking weaker and ceased to mix it. He was misled by the clearer appearance of the water, and imagined it weaker, when all the time it was equally strong. What was the consequence? The Roses ceased for the time to grow, the foliage has fallen off, and my friend writes to me to ask if I can let him have any buds, as his Roses have made no wood and are apparently going back. My friend, Mr. Baker, uses liquid manure with the greatest success, but never night soil. His mixture is made from sheep manure, soot, and a little guano. He applies this all through the blooming season—i.e., before and during the shows, for as soon as

the last show is over he never stimulates his plants, but leaves them to grow as Nature dictates. But some great rosarians have grown and shown splendid Roses without ever applying liquid manure. The late Rev. George Arkwright, whose Roses, particularly his *Souvenir d'un Ami*, will never be forgotten, used to say, "I never water; I live on the side of a hill, and have no means of watering, and I do not find my plants require it. In the driest seasons I only move the soil with a hoe so as to let the dew and moisture the easier down to the roots." It is therefore possible to grow Roses to great perfection without the aid of liquid manure. I am of course now referring to cut-back Roses, not to maidens, for very few of the nurserymen ever attempt to apply liquid manure to their plants. They grow far too many to be able to do this. Mr. Cant of Colchester does indeed use liquid manure, but only in limited quantity, and among these the famous *Tea La Boule d'Or*, which he alone appears to grow well, receives the most.

Another fallacy that appears to be exploded, at all events to have been abandoned as such by the amateur champion of the year, is the custom of buying new plants every year. Some few years ago the idea was that plants more than three years old were useless for exhibition. Now the great exhibitors believe that the older the plants the better they are. Mr. Baker is firmly convinced of this, and now only discards weak plants and replaces them with new ones.—WYLD SAVAGE.

### CURRENTS AND GOOSEBERRIES.

It appears to me that sufficient attention is not given in the gardening papers to small fruits, especially bush fruits, and as a consequence there are many inferior varieties cultivated to the exclusion of those which are of superior quality. I do not feel at all qualified to dictate on the subject, as I am not sure of some of the names of the best of those I grow, and will therefore merely send these remarks as a feeler, and ask for contributors to help to eradicate the worthless varieties, for good varieties will take no more room and their cultivation is not more difficult.

Probably to many of your readers a Black Currant is a Black Currant and nothing more, but there is as much difference in the quality of Black Currants as there is in that of different kinds of black Grapes, and nearly as much difference in their time of ripening. The cultivation of them is also quite as important, for they are, or should be, everybody's fruit. Birds are less troublesome to these than to most other fruits, and so long as a Black Currant is not starved it is not particular about soil or situation. If you say, "Black Currants are sour," I reply, Did you ever taste Lee's Prolific well grown? This Currant is worthy of a place amongst the dessert of any nobleman's table. I do not, however, consider it the best for cooking purposes, but I may be wrong. It is a notorious fact that many of the best flavoured fruits lose a great portion of their good character when cooked, and I am inclined to think this excellent Currant does. Black Naples is the earliest and the most acid Black Currant I have; it is the one which we generally gather in quantity for preserving, and for which purpose it is exceedingly good, but it wants gathering as soon as it is ripe or the best of the fruit will fall. Next comes Lee's Prolific Black, and if you eat a berry of this and then go back to Black Naples you will find there is a considerable difference in Black Currants. Black Grape is also an excellent Currant, not so sweet as Lee's, but considerably less acid than Black Naples, and in my experience it is the latest to hang on the bushes. I am gathering very fair fruit from it now (September 4th). There is still, I believe, in extensive cultivation the old black variety which should be entirely got rid of.

Of Red Currants *Raby Castle* under many aliases is undoubtedly king. Its only fault is that it fruits too freely, and consequently grows too little: it wants liberal treatment. When trained to a wall it is an easy matter to thin the fruit, but it is not easy to do this on large bushes. It retains its foliage longer than any other Currant with me, and consequently its fruit remains plump till the end of November, and sometimes later. It is not so long in the bunch as the long-bunched Red, but it has a larger berry of brighter colour, and it certainly makes a very handsome-looking dish. I have just measured some berries seven-sixteenths of an inch in diameter, or more than  $1\frac{1}{4}$  inch round, and that too from large bushes with at least a peck of fruit on each. It is late in ripening. I have tried many varieties and more names for the early and general crop, but I do not think the Red Dutch is yet superseded, certainly not by *La Hâtive*.

White Dutch is the only white variety I know worth growing. Of Gooseberries the first to come in is *Early Sulphur*; it always crops well, and is less subject to the caterpillar than other varieties. Next is *Green Gascoigne*, and then what is here called *Cockspur*, a medium-sized rough red, one of the very best flavour. I have what appears to be the same sort from a local nursery under the name of *Red Champagne*, but I can hardly think it is the true *Red Champagne*, as it scarcely keeps well enough for that, which I have seen hanging very late in the north. Can anyone tell me if *Red Champagne* will keep well in the south? say as well as *Warrington*, which is by far the best for keeping, and it always bears very abundantly. I have one called *Yellow Warrington* which is useful as a variety at this time of year, but its keeping qualities are not excellent, nor is its flavour to be compared with the red variety. Moreover, it is not a *Warrington* at all, for its growth is erect and that of *Warrington* is drooping. The varieties I have named keep up a continuous supply in ordinary seasons from the middle of July to the end of September, and are in their respective seasons the best which I have. I should like to have other colours if I could secure quality at the same time, say a good first early red or a good late yellow or green, for the Gooseberry is an important crop. I have had *Yellow Champagne*, or at least one called by that name, and discarded it as of not sufficient merit. Who will help me to make my selection complete?—WM. TAYLOR.

### CULTIVATION OF ZONAL PELARGONIUMS.

WE know of no class of plants so easy of cultivation, while rewarding us at the same time with so much late bloom during the winter months, as these *Pelargoniums*. Cuttings that were struck in the spring and the plants grown on in pots for indoor decoration should now be cut back, and, if necessary, shifted into larger pots or be top-dressed. Place them in a position where they will get as much sun as possible to ripen their wood; they will soon break freely, and will again commence flowering. Plants that are not required for indoor decoration during the summer should be potted and plunged in the ground in an exposed situation, and when the usual occupants of the conservatory during the summer months—viz., *Fuchsias*, *Achimenes*, *Coleuses*, &c.—are getting past their best the *Geraniums* can be taken up and introduced into the house as required. The advantages of planting them out in their pots are obvious. Firstly, they will not make such rank growth during the summer, and will show no signs of flagging in removal to their new quarters. The blooms should be picked off during the summer before they commence seeding, and a shift into No. 32 pots will last them during the winter. They should be kept as near the glass as possible; in fact, the lighter and drier the house is during the winter the better they will bloom. As regards the temperature required—if the plants are wanted merely for decoration 50° by day and 45° by night during December and January will be sufficient, but if a large supply of cut flowers is required 10° higher both by night and day will be advisable. The soil well suited for growing *Pelargoniums* is three parts of good loam, sharp sand and well-decayed manure to compose the remaining part. On choosing the varieties suitable for winter flowering select those that were exhibited by Mr. Cannell at the Royal Horticultural Society's meeting last winter; but no collection must be without the *Scarlet* and *White Vesuvius*, the latter being quite as free-flowering and quite as indispensable as the former.—WM. ETHERINGTON.

### STRAWBERRY FORCING.

IN discussing the merits of the two plans of raising Strawberries—viz., layering in 3-inch pots and afterwards potting on, and layering in their fruiting pots at once, Mr. Bardney lays great stress on the fact of his having tried both ways, and therefore settled the question, as he thinks. There are others, however, who have experimented in the same line, and the question has also been discussed before, and the general result of experiences and observation among Strawberry forcers seems to be that the system of layering in the fruiting pots possesses no advantages over any other, while it is cumbersome and inconvenient in various ways, for which reason the plan is seldom practised. If Mr. Bardney is anxious to find an authority who has tried and compared both systems like himself let him turn to page 232 of Thomson's "Fruit Culture Under Glass," where he will find that the author decides in favour of layering

in 3-inch pots first and potting off in the usual way. The present writer has seen Mr. Thomson's plants many times, and his crops as well, and better he never saw, and very seldom as good. Our plants are first layered in a ridge of good soil, where they root more quickly than in pots standing above the surface of the ground, and are lifted with fine bunches of roots, and never even flag in potting. Layered in this way not a tenth of the labour in watering, &c., is incurred.—FORCER.

### POTATOES.

I AM tempted by reading dismal accounts of Potato failure to give my small experience. I planted small whole sets from March 25th to April 15th, all my earliest being Myatt's Prolific. Following the advice of the Journal I made very wide rows, some by way of experiment 34 inches wide, and the result to me is very gratifying. I have a splendid crop; in some instances I have taken as many as thirty-six good sized tubers from one plant, and am glad to say there is no disease, while my neighbours are all bitterly complaining. I am convinced that the wide rows are a great cause of my success, as the haulms get plenty of air—an essential in such weather as this. About a fortnight ago I had all the haulms pulled out as a preventive. As a sample of the lateness of the season I may tell you that one of my neighbours, a farmer, was cutting his first crop of hay to-day, September 8th.—C. C., *Cheshire*.

### ROSES AND THEIR CLASSES.

WITH the recent influx and probable multiplication of Mr. Bennett's lovely pedigree Roses, and the introduction of hybrids from the continental and home raisers, it is becoming a somewhat difficult matter to catalogue such under their proper class; and as the former may be largely shown next year, some perplexing questions may arise for the judges, which perhaps a timely hint may prevent, and allow the schedules for next season's shows to be amended. For instance, Bennett's lovely Duchess of Connaught (H.T.?) is so much like *La France* (H.P.?) in colour, that except for its foliage and perfume it would not readily be distinguished from it; and although from observation I should class these pedigree Roses among the Teas for convenience, it becomes a question whether a separate class could not be created for them and other Hybrid Teas—*Madame Bernaix* for example. *Cheshunt Hybrid*, again, is to my thinking out of place shown in a box with Teas, while *Boule de Nègre*, *Olga Marix*, and its congeners are not quite at home with *Noisettes* (the latter has done us good service as a pure white), though not often shown; while *Madame Noman* and *Mdlle. Bonnaire* are scarcely Hybrid Perpetuals, though they come in well for colour in a front row. If *La France* is to be classed as a Hybrid Perpetual, where is the distinction to be drawn between it and the Duchess of Connaught as named above? Further, the *Gloire de Dijon* race, which now contains some distinct and fine varieties—*Belle Lyonnaise*, *Bouquet d'Or*, and *Madame Berard*, are not at home with the Teas; and I have heard rosarians object to their being pitted against such chaste blooms as *Niphetos*, *Marie Van Houtte*, *Devonensis*, &c., while *Gloire de Bordeaux*, which if I recollect rightly, was once called a Bourbon, is now sometimes classed in Teas. This would with *Cheshunt Hybrid* come into a class with the *Dijons*, but then *Baron Gonella* is first cousin to it.

I throw out these hints and remarks with a view of starting the question. The matter might be taken up by the National Rose Society, and their dictum would soon cause it to assume a practical shape. While on this subject allow me to state that some reformation is required in the schedules of many societies as regards the larger classes for Roses. The competition does not always allow that "fair field and no favour" which all exhibitors look for. For instance: A, B, and C show forty-eight trebles; A sets up all Hybrid Perpetuals; B thirty Hybrid Perpetuals and eighteen Teas; and C shows the best and brightest Hybrid Perpetuals and few Teas. The judges with, perhaps, an excusable partiality for Teas, give B the first, C the second, and A the third prizes. A complains that by the unwritten law of rosarians he is rightly first and complains; C says his Roses are the best and he ought to have had the first place. As a preponderance of Teas his stands are deficient in size and colour as viewed occasionally, and Teas should not have placed B over him. Why does not the Rose Society make a rule that forty-eight trebles shall not contain more than twelve Teas, twenty-four trebles not more than eight, and so on; while singles might follow on the

same plan? I agree with those who think that Teas and Hybrid Perpetuals should compete in separate classes, but in the singles a few Teas are a great feature; the delicate colours of *Adam*, *Madame Bavy*, *Alba Rosea*, &c., and the rich golden yellow of *Maréchal Niel* can scarcely be overlooked.

If Mr. Bennett's Roses are to be classed as Teas there is little doubt they will be largely drawn on for contrast in boxes of twenty-four and upwards; in fact, the Tea class, always attractive at exhibitions, might increase its numbers, say to eighteen and thirty-six. Everyone admires Rose buds, and justly so; nothing can be more lovely than such. I have often wondered why prizes have not been offered for twelve or eighteen varieties, four buds of each. Possibly some of these matters may have previously come under the notice of the National Rose Society, but I have not a schedule by me. If they have received attention it should be made known to a wider circle.—GEORGE BUNYARD, *Nurseries, Maidstone*.

### EXHIBITION OF THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

THIS Exhibition, held at Edinburgh, September 10th, was the best this Society has held since the International of 1875. The show of Grapes was especially remarkable, out-of-door fruit as a matter of course being next to a failure as a feature of the Exhibition. Vegetables were very largely shown, but were very deficient in quality to that generally staged in the northern capital. Cut flowers were also very deficient both as regards quality and quantity, whilst the show of pot plants was over the average both in numbers and quality. The Lawson Seed and Nursery Company boldly eschewed the tables, and at the west end of the market filled a space of something like a quarter of an acre with fine groups of plants arranged on the floor. The centre bed of the group, oval in shape, was composed of a rich collection of hardy ornamental shrubs. This was flanked with round beds to match at each side, composed of stove and greenhouse foliage plants. The westmost group was made up like the centre one of ornamental shrubs, was long and narrow, and arranged in an easy flowing line. The eastmost bed next to the body of the building was heart-shaped, and contained a rich collection of ornamental flowering and foliage plants. In continuation of this bed the other nurserymen connected with Edinburgh had large groups of plants staged on tables right down the centre of the hall, whilst a series of smaller tables on either side contained the competition produce, a broad table at the east end of the market backed with *Firs* finishing the furnishing of the hall in that direction. Altogether viewed from the gallery running all round the market the effect was very good, though we hope to see the Lawson Company's lead followed at any rate by the nurserymen at future shows. The nurserymen's tables were arranged with very much the same class of materials, Tree Ferns and Palms being profusely used for the centres, and furnishing plants filling up the remainder. In the table set-up by Messrs. Ireland & Thomson the newer *Crotons* and *Dracænas*, new *Calceolæ*, *Pitcher Plants*, and the newer foliage subjects were freely used, rendering theirs the most *richest* in the Show. In the Messrs. Methven's, small plants of *Lilium auratum* were used in quantity with good effect to lighten up their group. Downie & Laird relied on boxes of cut florists' flowers, such as it is necessary to come to Edinburgh in order to realise their beauty. There were the best of the *Phloxes*, a splendid lot of *Pentstemons*, cut Roses, and some of their new strain of bedding *Pansies*. *Phloxes* in pots were also mixed amongst the foliage plants. In the Messrs. Dickson & Co.'s stand we noted some boxes of cut flowers of double *Chamomile* well worth looking after. Messrs. Todd & Co. contented themselves with laying out a table for twenty-eight dinners, which though rather heavy in the arrangement attracted a deal of interest. Mr. Robertson Munro filled a large table with cut hardy herbaceous flowers, some 150 kinds being laid under contribution. Some stands of good Roses were exhibited by Mr. Hugh Dickson, Belfast, and Mr. T. Smith, Stranraer.

The fruit tables, however, were the great centre of attraction, the Grapes especially being worthy of great praise. Something like three hundred bunches of these were shown, one exhibitor staging nearly fifty bunches on his own account. In the class for twelve bunches, six black and six white, Mr. McIndoe, Hutton Hall, Guisborough, Yorkshire, occupied the leading position with the following varieties:—*Foster's Seedling*, *Golden Champion*, two of *Muscat of Alexandria*, rather *passé*; *Duke of Buccleuch*, extra fine, and a small bunch of *Bowood Muscat*; *Gros Guillaume*, large, but hardly ripe; *Gros Colman*, the same; *Madresfield Court*, large and extra fine; *Black Hamburg* and *Alnwick Seedling*, both extra fine; and a small bunch of *Franken-thal* completed the number. The second place was held by Mr. McIntyre, gardener to C. Tennant, Esq., M.P., The Glen, Peebleshire. The six white bunches in this collection were all *Muscat of Alexandria*, fine, but not up in colour. The blacks consisted of two fine bunches of *Black Prince* and four small but finely finished

**Black Hamburgs.** Mr. Hammond, gardener to Sir W. Lawson, M.P., Brayton, Carlisle, was the only other competitor, and to his collection the third prize was awarded. Three very fine bunches of Alicante were staged in this collection. In the class for eight bunches were five collections competing. Here Mr. J. Kirk, Ernsapie, Castle Douglas, occupied the first place with an even and extra fine lot. Buckland Sweetwater and Alicante were particularly fine, the other varieties being Black Hamburg and Duke of Buccleuch, two bunches of each. Mr. McIndoe second with Duke of Buccleuch, extra large Black Hamburgs, Foster's Seedling, and Madresfield Court, two of each. Third Mr. Loudon, gardener to T. Daines, Esq., The Quinta, Chirk, Yorkshire. Muscats were finely coloured, and Gros Colman extra fine in this collection, but as a whole the bunches were irregular in size. Seven exhibitors contested the class for four bunches, Mr. McIndoe being again successful here with an extra fine lot—Duke of Buccleuch and Muscat of Alexandria, grand; Black Hamburg and Madresfield Court, extra fine. Mr. Kirk second, and Mr. Loudon third. For two Muscat of Alexandria Mr. McConnachie, gardener to Mr. Smollet, Cameron House, Alexandria, first with splendidly finished specimens, yellow as gold; Mr. McIndoe second, with bunches rather past their best. Two Black Hamburgs.—First Mr. J. Boyd, gardener to W. Forbes, Esq., Callender Park, Falkirk, with extra fruit; second Mr. Curror, gardener to G. Douglas, Esq., Eakbank, with large double bunches. Two Golden Queens.—First Mr. McIndoe; second Mr. M. Ferguson, gardener to A. Usher, Esq., Oswald Road. An exceptionally bad class. The heaviest bunch of white Grapes was from Mr. Dickson, gardener to J. Jardine, Esq., Arkleton, with a handsome White Syrian, weighing 13 lbs. 8 ozs. Mr. Kirk second with Trebbiano, 11 lbs. 2½ ozs. For heaviest black Mr. R. Cameron, gardener to J. Welsh, Esq., Ericstane, Moffat, was first with a shabby bunch of Alicante, weighing 7 lbs. 18½ ozs.; Mr. J. Dickson second. For one bunch Muscat of Alexandria Mr. L. Carruthers, Stillwood, Corstorphine, was first with a small bunch, fine in berry. For one Black Hamburg Mr. J. Boyd was first with a fine specimen; Mr. W. Lees, Hillsbro' Castle, Co. Down, Ireland, was first for Alicante, compact and fine. For Lady Downe's Mr. J. Maule, gardener to Mrs. McNab, Howwood, Renfrew, was first with a small bunch, large in berry but not finished. Mr. McIndoe was first for Venn's Black Muscat; Mr. Gould, gardener to J. White, Esq., Dolphinon, for Gros Colman, wanting in colour; Mr. W. Kay, gardener to Sir J. Foulis, Bt., Milburn Tower, for Golden Champion, extra fine; Mr. G. Gordon, gardener to J. McIntosh, Esq., Teviot Bank, for Duke of Buccleuch, poor; Mr. Boyd was first for Muscat Hamburg, with a splendidly finished bunch. In the class for any white Grape not named in the schedule Mr. J. Dickson, Arkleton, was first with Golden Hamburg, extra fine; Mr. Anderson, gardener to the Earl of Stair, Oxenford Castle, being second with a nice bunch of Mrs. Pearson. The finest flavoured white Grape was Duchess of Buccleuch, the corresponding black being Muscat Hamburg. The largest-berried Grape was Gros Colman. The centre of the Grape table was raised, and furnished with table plants and bouquets.

Next in importance to the Grapes were the collections of fruit. For twelve sorts there were only two exhibitors, Mr. Johnston, gardener to the Earl of Strathmore, Glamis Castle, Forfar, being first with a lot not quite up to his average. The Muscats, Alicante, and Golden Queen Grapes were the finest in the Show, Black Hamburgs not so good, a Smooth Cayenne Pine Apple, Melons Victory of Bath and Lord Strathmore's Favourite, both fine, fine dishes of Peaches Red Magdalen and Gros Mignonne, Nectarines Pitmaston Orange and Duc du Telliers, and Brunswick Figs made up the collection. Mr. McIndoe was the other exhibitor, and was a very close second. Mr. McIndoe took first honours in the collection of eight sorts, showing eight bunches of Grapes, a Melon, Violette Hâtive and Alexandra Noblesse Peaches, and Figs. Mr. Fairgrieve, gardener to the Duchess of Athole, Dunkeld, second, and Mr. McConnachie third. In the collection of ten sorts of hardy fruits Mr. Fairgrieve was first, Mr. McIntyre second, and Mr. McIndoe third. Pine Apples were limited in number; Melons a large competition. To Peaches the same remark applies, Mr. McKinnon, gardener to Viscount Melville, Melville Castle, taking first with a grand twelve, Mr. Hammond, Brayton, running a very close second. Other fruits do not call for particular mention. In the cut flower section the class for twelve Zonal Pelargoniums, three trusses of each variety, formed the most attractive display, other flowers being far below the average.

In the plant classes were some fine specimens; particularly so were the Fuchsias, which were large, well bloomed, and healthy. In the class for six flowering plants Mr. J. Paterson, Millbank, staged four healthy Heaths, well bloomed and large, a grand Statice, and a good Eucharis amazonica. The same exhibitor was also first for four Cape Heaths. Mr. Hammond, Brayton, was first with four foliage plants with Crotons majesticus and Weismanni, Thrinax elegans, and a Dasylium; also for two Dracenas and two Crotons. For six Ferns Mr. A. Paul, Gilmore Place, was first with three grand Gleichenias, Microlepia hirta cristata, and a couple of Adiantums. For four Adiantums Mr. McDonald, gardener to D. McGibbon, Esq., was first with Flemingii, gracillimum, pedatum, and cuneatum, in grand order. Dr. Paterson, Bridge of

Allan, took the Orchid prizes. We had almost passed unnoticed a table furnished from the Botanic Gardens by Mr. Sadler. This group was very interesting. Numbers of carnivorous plants, such as Darlingtonias, Sarracenias, Nepenthes, Droseras, &c., medicinal and other useful plants, a grand panful of Disa grandiflora and various rare and uncommon plants were contained in it.

### FAULTS IN GRAPE CULTURE.

WHAT are the most common faults in Grape culture? Overcropping, excessive restriction of growth, deep narrow borders, bad drainage. What are the evils resulting from such a state of things? Poverty of colour, shanking, small bunches and small berries, sickly attenuated growth, and barrenness. These are all matters of moment to which the trying weather of the present summer emphatically draws attention. Never were badly coloured Grapes so frequently to be met with. Do not, however, let us lay all the blame upon the season, for undoubtedly the borders are often at fault. Very confidently do I assert that there never was a better season for Grapes having the advantage of well-drained shallow borders. It is mere repetition to write this, but apparently it will have to be written many more times before the full significance of the lesson is grasped and its teaching applied. Why is it that faulty Vine borders are so common? Ignorance of the process of border-making cannot be pleaded, it has been too frequently and thoroughly expounded for that. I fancy it must be that the first cost so often proves too heavy, and so the border is hurried over, the Vines are planted, and once established and fruiting tolerably well are left undisturbed, and the fault, though hidden for a time, is nevertheless there, and will inevitably makes its presence felt sooner or later.

I would suggest, whenever it is found impracticable to complete a full-sized border at first, to make it piecemeal year by year till the whole is accomplished. With care this method proves highly beneficial for the Vines, the roots quickly spreading into the annual supply of fresh soil, and sending up ample stores of sap to maintain that vigour of branch and foliage without which there never can be an abundant crop of well-finished fruit. The full value of shallow borders has long been known to our best Grape-growers. Many years ago when a very young man I went to see the Royal gardens at Windsor, and found in the vineries the finest crop of Grapes I had ever seen. Upon asking the depth of the very wide borders I was informed that they were of an uniform depth of 18 inches. Such a shallow border was then new to me, but I could not call it in question, for the sight of the huge clusters of fruit carried conviction with it.—EDWARD LUCKHURST.

### THE GEOLOGY OF STRAWBERRY GROWING.

MR. C. P. PEACH has described his soil, which appears to suit the Strawberry, and if you will allow me I will say a few words about mine. In the first place I live in a valley cut out of oolitic rocks at some time or other by the river Churn, which is a tributary of Old Father Thames. In this valley the bare rocks and clay are not exposed but filled up more or less with gravel, and in this gravel various waterworn fossils are found, some of which are from the inferior oolite and other formations miles away in the upper part of the valley. There are about 2 feet of soil on the top of the gravel, but part of this is made ground, the debris of houses, &c., during the Roman occupation of this place. The Romans were very fond of this valley, perhaps from the easy access to water, and in our garden there are the remains underground of part of at least six distinct buildings, and Roman coins, &c., are frequently turned up. In this soil the Strawberry flourishes well if properly manured. We already have grasses advertised to suit the various geological strata, and perhaps one of these days may have Strawberries the same. The late Mr. Rivers said his Eliza only flourished properly where there was some chalk in the soil, and another authority said that Carolina superba only thrives well in the sandy soils of the red sandstone formations, and the late Mr. Beaton said that no mortal man could grow the British Queen at Shrubland Park unless the whole nature of the soil was altered. This Strawberry, Mr. Darwin says, succeeds but in few places either in England or France, and its success depends more upon the nature of the soil than the climate. I have seen Strawberries thrive very well on the forest marble and lias clays, indifferently on the Oxford clay, and badly on the plastic clay, and not very well, I believe, on the London clay unless there was some



admixture of sand or gravel. They succeed best on loamy soils, or where there is a deep loam on gravel; and in so many cases in this country the soils are not entirely derived from the rocks on which they rest, but composed of gravel, sand, and clay, the *débris* of other formations, that it would be difficult to construct a table of varieties suitable for each formation that would be practically useful, although I believe it would be right in the main, and the same difficulty has been experienced with regard to the Grapes. The soil also has something to do with the quality of the fruit. Some years ago when Trollope's Victoria was more generally grown the flavour was not considered good in some places, whilst here, and in some other soils, this fresh-eating Strawberry was rather a favourite, and it is the same with some others, and our object should be to find out their peculiarities and grow those which thrive and do well in the district in which we live.—*AMATEUR, Cirencester.*

### BRIGHTON HORTICULTURAL SOCIETY.

SEPTEMBER 10TH AND 11TH.

THE Autumn Exhibition of the above Society was held in the rooms and grounds of the Royal Pavilion, Brighton, proving a success in every respect. Plants were well represented; cut flowers were numerous, the Dahlias being especially good, but the display of fruit was excellent, the entries numerous, and the general quality of the exhibits very fine both in size and finish. One large marquee contained the majority of the plants and cut flowers, the former being arranged on stages down the centre and the latter on side stages, while from the roof hung a number of large Chinese lanterns that were employed to illuminate the marquee on the first evening of the Exhibition. In the remarkably handsome and spacious apartments of the Pavilion itself were arranged with excellent taste the Tree Ferns, foliage plants, and the extensive miscellaneous collections of plants from the various nurserymen in the neighbourhood. One fine group of new plants, such as *Dracenas*, *Crotons*, *Orchids*, &c., from Messrs. Veitch & Sons of Chelsea attracted considerable attention. The table decorations were in one room, while another contained the collections of fruit. There was only one disadvantage in exhibiting plants in these apartments, and that was their somewhat dark heavy appearance, but no doubt under artificial light the effect was excellent. The schedule enumerated a large number of classes in two divisions, one open to all England and the other confined to the gardeners and amateurs of Sussex. In most of the former the competition was close and good.

**PLANTS.**—Stove and greenhouse plants were well shown; Mr. W. Balchin, nurseryman, Brighton, securing the chief award in the open class for eight varieties with a good *Bougainvillea glabra* over 6 feet high; a fair *Allamanda chelonii*; *Dipladenia Brearleyana* with handsome flowers; a neat pyramidal specimen of *Rondeletia speciosa* major, and several other plants. Mr. Meachen, gardener to C. Armstrong, Esq., Withdeane, followed, among his plants being a beautiful specimen of *Erica cerinthoides*. Mr. W. Huggett, gardener to Dr. Jeffery, Eastbourne, was placed third, the most noticeable plant in his collection being the elegant *Swainsonia galegifolia albiflora*, which is rarely seen in the exhibition tent. In the corresponding county class Mr. Meachen obtained the principal prize. These plants occupied nearly all one side of the stage in the marquee. On the opposite side were some remarkably handsome specimens of *Coleus*. Mr. W. Tringmar, gardener to Henry Davey, Esq., Mayor of Brighton, was most deservedly awarded the first prize for six enormous and richly coloured specimens of the following varieties—*Sir Bartle Frere*, *Princess Louise*, *Queen Victoria*, *Nil Desperandum*, *Golden Gem*, and a seedling. This was an exceptionally fine collection, the plants being 6 to 7 feet through. Mr. J. Shriver, gardener to the Corporation of Brighton, was placed second with good specimens, among which *The Shah* and *Victor Lemoine* were especially noticeable for their vigour and colour. Mr. W. Balchin was third. The last-named exhibitor was adjudged the chief prize for six exotic Ferns: his specimens were large and good, including *Cibotium regale*, *Cyathea dealbata*, *C. medullaris*, and *Gleichenia speluncæ*. Mr. W. Miles, nurseryman, Brighton, followed with much smaller specimens. The same exhibitors divided the prizes for foliage plants, both contributing good specimens. *Fuchsias*, *Pelargoniums*, *Begonias*, and *Orchids* were also shown, but not in such condition as to merit specification.

**CUT FLOWERS.**—Over forty boxes of cut Roses were staged, and many of the blooms were good and bright for the time of year. In the open class for forty-eight triplets Messrs. Keynes and Co., Salisbury, obtained highest honours for a collection of rather small but bright blooms. The best were *Maréchal Niel*, *Exposition de Brie*, *Madame Marie Rady*, *Marie Baumann*, *Ferdinand de Lesseps*, *Mons. E. Y. Teas*, and *Alfred Colomb*. Messrs. Paul and Son, Cheshunt, were placed second with fair blooms; and Messrs. Mitchell & Sons, Uckfield, were third with indifferent specimens. For twenty-four triplets Messrs. Keynes & Co. and Mr. W. Balchin

were awarded equal first prizes, but the blooms were not very good in either collection. Mr. J. Ridout, gardener to J. B. Hayward, Esq., secured the chief prize for twelve triplets with fair blooms, and he was followed by the Rev. R. C. Hales, Woodmancote. Dahlias were exhibited in superb condition, Messrs. Keynes and Co.'s premier collection of forty-eight blooms being magnificent. The blooms were large, finely formed, and of the best varieties. The most noticeable were *Perfection of Primrose*, fine pale yellow; *Christopher Ridley*, rich glowing crimson; *Sidney Herbert*, bright purple lake; *Criterion*, an excellent pink; and *Thomas Goodwin*, very dark velvety red. Mr. W. Seale, nurseryman, Sevenoaks, was second, also sending good blooms, but not so regular as the preceding. Several fair collections were also staged in the county classes, notably by Mr. Allfrey, gardener to Miss Melvil, Henfield, and by Mr. Edwards of Three Bridges. Messrs. Keynes & Co. were awarded first-class certificates for the following new and excellent Dahlias—*Lord Chelmsford*, extremely dark purplish red; *Mrs. Hodgson*, yellow, the florets tinged with crimson purple; *Ethel Britten*, tinged with pale purple; *Charles Scott*, scarlet, outer florets tipped with white, neat and pretty. *Asters* were shown, but of only medium quality. Mr. Cannell, nurseryman, Swanley, Kent, exhibited a large and choice collection of cut flowers not for competition, including *Verbenas*, *French Marigolds*, *Pelargoniums*, *Hollyhocks*, &c.; and Messrs. Wm. Paul of Waltham Cross and Messrs. J. Laing & Co., Forest Hill, contributed boxes of cut Roses in fair condition.

The table decorations were numerous and generally tasteful. The principal prizetakers were Mr. Seale, Sevenoaks; Mr. Burley, Brentwood; Mr. R. Miller, Shoreham; and Mr. Craggs, South Norwood.

**FRUIT.**—As we have already observed fruit was abundant and in excellent condition, there being entries in nearly all the thirty-two classes provided. The chief interest, however, centred in the open class for six bunches of Black Hamburgh Grapes, where the first prize consisted of a cup, valued at ten guineas, presented by James Ashbury, Esq., M.P.; and here we may remark that there was great disproportion in the value of the prizes, for the second was only £2 and the third £1, and it was especially noticeable in this case as the competition was close. Mr. W. Coleman, gardener to Earl Somers, Eastnor Castle, Ledbury, was awarded the coveted cup for six superb bunches, fine berries, and handsomely finished; Mr. J. Williams, gardener to C. Liddell, Esq., Peasmarsh, was an excellent second, his collection being very close to Mr. Coleman's in point of merit, and indeed the Judges experienced some difficulty in arriving at a decision. Mr. J. Goldsmith, gardener to E. Hardwick, Esq., Tonbridge, was placed third with rather small bunches but of fair quality. There were ten competitors in this class. Mr. Coleman was again to the front with six fine bunches of *Muscat of Alexandria*, and was followed by Mr. Osborne, Kay's Nursery, Finchley, and Mr. W. Lacey, gardener to C. S. Mortimer, Esq., Wigmore, in the order named, with fairly ripened fruit but small; seven entries. Mr. Coleman was also first with three bunches of Black Hamburghs; Mr. A. Bashford, gardener to Miss Douglas, Tunbridge Wells, and Mr. Wickham, gardener to Colonel Hannington, Hurst, being second and third respectively. For a collection of ten dishes of fruits Mr. Rutland, gardener to the Duke of Richmond and Gordon, Goodwood, secured highest honours with fine Walburton Admirable Peaches, well-ripened Kirke's Plum, good Morello Cherries, a small Melon, and rather poor Grapes. Mr. H. Apter, Broadwater, Worthing, was second, his collection including good Black Alicante Grapes and Brown Turkey Figs. Many other fruits were well represented both in the open and the county classes, especially Peaches, Nectarines, Plums, and kitchen Apples, which we cannot note in detail; but the principal prizes were obtained by Messrs. Rutland, Ford, Holman, Wise, Hutson, and Wady.

The management of the Show was entrusted to Mr. Shriver, gardener to the Corporation of Brighton, who has charge of the well-kept Pavilion Grounds, assisted by the Secretary, Mr. Edward Carpenter, and considerable credit is due to both gentlemen for the taste and care displayed in the arrangements. Visitors were very numerous on the opening day, but on the second the weather proved unfavourable, and that somewhat diminished their numbers.

### GRAPES WITHOUT FIRE HEAT.

THE only explanation I can give to "A. C. M." (page 207) with regard to the Grapes exhibited at the Glamorganshire Show on the 20th ult., and ripened without fire heat, is that there is no means of heating the vinery in question excepting by an old crooked flue. When the fire is lighted at the end of this, sometimes it draws towards the chimney, but just as frequently out at the furnace door; always managing, however, to consume a good quantity of coal—often so much, indeed, that it is entirely out of proportion to the heat which we get from the flue, and we never use the flue at all when we can possibly avoid it. During April last, when the Vines were starting into growth, the fire was sometimes lighted at night, but it was never

in for more than two days at a time; and altogether the firing might amount to about ten days this season, but from the beginning of May until this day no attempt has ever been made to heat the house artificially. As "A. C. M." thinks it important to know whether the Vines were started with fire heat or not, perhaps he will inform us how much importance he attaches to the amount of firing I have just stated, and if it proves that the Grapes were ripened with the aid of fire heat? Respecting the climate of Glamorganshire being salubrious, it may be more so at times than some other parts, but it would be difficult to find a person in the county who can remember it being so this season. The fact of the matter is, and it may interest "A. C. M." to know it, that those who have to grow Grapes, Pines, &c., in quarter-heated houses have just to do the best they can under the circumstances, and they soon find out that the hard-and-fast line laid down about temperatures and artificial heat is not so absolutely necessary to fair success as some imagine it.—J. MUIR, *Margam*.

### THE HOLLYHOCK FUNGUS AND ITS PREVENTION.

AFTER having been baffled by the disease which at one time threatened the extermination of the Hollyhock, we tried a plan which has been not only completely successful, but at the same time the operation is so simple that all whose plants are infested with the fungus can soon destroy it with very little trouble by carrying out the following simple plan.

After the plants have done blooming (or earlier if desired) cut them down in the usual way, removing any shoots that have grown at the base of the plants, taking care not to disturb the dormant buds that will be found beneath the soil. Burn at once all the stems, leaves, and shoots that have been cut from the plants, and cover each plant with any light soil 3 inches in depth. Allow the plants to remain in the ground for about three or four weeks. By this time many will be pushing through the soil and quite free from fungus; they can then be taken up and potted, and are ready to be placed in heat when required to produce cuttings for propagation. We have about a hundred plants growing this season, clean and healthy. Many of the leaves measure from 12 to 15 inches in diameter, and yet the parent plants were greatly infested with fungus last autumn, but after passing through the above operation we have not seen the slightest appearance of the fungus. We hope the day is not far distant when this pest will be banished from our land, and the Hollyhock again take its place as one of the finest and most majestic of our autumnal decorative plants.—JOSEPH OLIVER, *Estlington Park*.

### ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 16TH.

THIS was the last of the fortnightly meetings for the season, and there will not be another until October 14th. Numerous collections of plants and cut flowers were exhibited, the Dahlias being especially fine, and Messrs. Veitch's group of plants attracted general attention owing to the large number of *Nepenthes* it contained. Messrs. Cannell, Keynes, and Walker were the principal exhibitors of cut flowers. Those from the first-named gentleman admirably illustrated the gradual floral advancement of the Dahlia.

**FRUIT COMMITTEE.**—Henry Webb, Esq., in the chair. The duties of the Committee were very light on this occasion. Mr. C. Osman, South Metropolitan District Schools, Sutton, Surrey, sent a scarlet-fleshed Melon not of very good quality. Mr. Hyde, Farnborough Park, was accorded a letter of thanks for a seedling Melon of fair quality named Hyde's Hybrid. Mr. Killick sent a dish of a white transparent Apple, which was characterised by the Committee as very good and deserving of cultivation in every collection; also dishes of Suttons' Magnum Bonum Potato, which Mr. Killick states was the only variety out of forty grown in one field that was quite free from disease; and Suttons' Red Fluke, of which only 5 per cent. were diseased.

**FLORAL COMMITTEE.**—J. McIntosh, Esq., in the chair. An extensive and imposing group of plants was exhibited by Messrs. Veitch & Sons of Chelsea. From a bar elevated about 6 feet above the table were suspended numerous fine *Nepenthes* in baskets, and below them were arranged Orchids, Crotons, Rhododendrons, &c., the central plant being a handsome specimen of *Nepenthes Rafflesiana* bearing nearly twenty large pitchers. The Orchids were good, and the most noticeable were the following:—*Zygopetalum maxillare*, with nine spikes of its distinct flowers; *Saccolabium Blumei majus*, three long spikes of fragrant delicately-hued flowers; *Cattleya Harrisonii*, very pretty, sepals and petals pale purple, labellum with a crimped margin slightly tinged with

the same colour; *Odontoglossum grande*, bearing seven large and handsome flowers; *Lælia elegans*, labellum extremely rich bright crimson. The principal *Nepenthes* that were represented were *N. hybrida*, *N. Cheloni*, *N. Wrigleyana*, *N. Ratcliffiana*, *N. zealanica rubra*, diminutive pitchers; *N. Courti*, *N. Hookeri*, *N. intermedia*, *N. hybrida maculata*, *N. Sedeni*, and *N. Kennedyana rubra*, all of which vary considerably in the form, size, colour, and markings of their pitchers. Among many other noteworthy plants the bright-coloured hybrid Rhododendrons Princess Fredericki and Duchess of Edinburgh were especially prominent, also the finely variegated *Erythrina marmorata*, and several Crotons. First-class certificates were awarded for *Cypripedium oenanthum*, a hybrid between *C. insignis* Maulei and *C. Harrisonianum*, the petals and labellum are dark-coloured, the upper sepal being streaked and spotted with dark red, margin white; *C. calanthum*, small flower, sepals spotted near the base, upper sepal greenish, streaked with dark red; *Nepenthes Ringleyana*, a hybrid between *N. Hookeri* and *N. phyllamphora*, narrow greenish pitchers mottled with red. A special vote of thanks was awarded for the group.

Mr. William Bull, Chelsea, sent several new plants, including *Coleuses*, Orchids, Palms, and a *Drosera*, *D. dichotoma rubra*, for which a second-class certificate was awarded. It differs from the species, as the name expresses, in the red colour of the glandular hairs that cover the leaves. *Dendrobium Goldiei*, an exceedingly pretty Orchid, bears a spike of small, bright, purplish-lake-coloured flowers, the sepals having a fine margin of white. *Calyptrogonia Swartzii* is a handsome Palm with graceful bright green pinnate leaves. Messrs. J. Keynes & Co., Salisbury, exhibited a stand of three dozen Dahlia blooms in superb condition, and including several beautiful varieties. The best were Ethel Britten, florets white tipped and tinged with purple, excellent form, first-class certificate; Triumphant, bright purple lake, a handsome flower; William Ady, very distinct, pale purple streaked with maroon. Miss Browning, bright yellow. Mr. J. M. Gilkes, Wickham, Newbury, sent cut blooms of Quilled Asters, several of which were very good, but no names were attached. A silver Banksian medal was awarded.

Mr. H. Cannell, Swanley, Kent, contributed an extensive collection of Dahlia blooms representing the bedding, Pompon, Show, and Fancy types, also the single forms. The best of the bedding varieties were King of Dwarfs, very deep purple; Queen Victoria, good yellow; Rising Sun, bright scarlet; Crimson King, very dark crimson or maroon. Among the Show varieties the most noticeable were Rifleman, neat flower, bright crimson; Countess of Lonsdale, large, beautiful in form, pink; Victory, very dark maroon; E. Newcombe, pale yellow; H. Turner, white, with a faint tinge of purple in the lower florets. The Fancy varieties Queen Mab, R. Burns, and Summertime were the best. The best Pompons were Sunshine, scarlet; Snowflake; Hercules, bright pink; Triomphe, good yellow; Sappho, dark crimson; White Aster; Sensation, pale yellow; and Rigoletto, maroon. The single forms represented were Cervantesii, mexicana, coccinea, lutea, glabra, viridiflora, the peculiar green-flowered form; Yuaicui, the scarlet Cactus Dahlia, for which a botanical commendation was awarded; and Paragon, a remarkably pretty form, the outer florets large, dark maroon in colour, with a light margin. Mr. Cannell also sent a box of Cockscombs and Tigridia Pannonia var. grandiflora, all very good and showy. A cultural commendation was awarded for the Tigridias, and a vote of thanks and a silver Banksian medal were awarded for the entire collection. Mr. B. Lloyd, Brookwood Asylum, Woking, exhibited some seedling *Coleuses* and a specimen of *Ophiopogon Jaburan aureo-variegatum*, with narrow variegated foliage and scapes of pale purple flowers. Mr. J. Smith, Edmonton, and Messrs. Rawlings Bros., Romford, each sent collections of seedling Dahlias, some of which were very bright and neat. The former was awarded a vote of thanks. Mr. J. Y. Mould, The Nursery, Pewsey, Wilts, sent cut flowers of Verbenas. A first-class certificate was awarded for the variety Mr. Thompson, flowers large, scarlet with a white centre, and compact truss. Several other good varieties were shown, notably Mrs. Mould and Warren Hastings.

Mr. B. S. Williams, Upper Holloway, exhibited a group of plants, including Orchids, Palms, Ferns, and miscellaneous stove plants. A specimen of *Tillandsia Lindenii*, claiming to be the true species, was awarded a first-class certificate, but it was referred to Dr. Masters for identification. The bracts are pink, closely imbricate, and flattened out into an elliptical-shaped spike, bearing purplish-blue flowers, affording an agreeable contrast. A similar honour was awarded to *Nepenthes robusta*, a hybrid between *N. Hookeri* and *N. phyllamphora*, very free in growth, and bearing numerous pitchers marked with dark red. A vote of thanks was accorded. Mr. J. Walker, nurseryman, Thame, exhibited an extensive collection of Dahlias and Asters in fine condition as regards colour and form. The best Dahlias were Monarch, very dark maroon; Prince Arthur, good yellow; Earl of Radnor, purplish lake; Bismarck, crimson maroon. The best Quilled Asters were Purple Prince, Snowflake, and Oxonian, purple with white centre. A silver Banksian was awarded. A vote of thanks was accorded to Mr. W. Clarke, gardener to J. Rains, Esq., Clapham Common, for *Lilium auratum* bearing a large number of flowers. Mr. H. Boller

of Kensal New Town sent several succulent plants. A second-class certificate was awarded for *Agave marmorata*, dark green leaves with whitish transverse bars.

Mr. C. Green, gardener to Sir G. Macleay, Bart., Pendell Court, exhibited flowers of *Carolinea insignis*, one of the Bombaceae. The flowers are large, with narrow, whitish, recurved petals and numerous stamens with reddish filaments; it is extremely fragrant. A cultural commendation was awarded. Mr. Green also sent fruit spikes of *Gunnera manicata*, and flowers of *Aristolochia Kämpferi* and *Nymphaea Eugénie*. A vote of thanks was accorded for the group. A large collection of good seedling Tuberous Begonias was sent from the Society's garden at Chiswick. Many of the varieties were remarkably distinct and the flowers large. A number of fine Asters were also contributed from Chiswick.

### PORTRAITS OF NEW AND NOTABLE PLANTS.

**DRACENA FLORIBUNDA.** *Nat. ord., Liliaceae.*—"This is one of the largest and most striking of all the known Dracenas. For many years the plant has been one of the most conspicuous members of the group of arborescent Liliaceae in the Palm house at Kew, but it has never flowered until this present summer. Now that we know it completely, it proves to be a well-marked new species, remarkable for its very large drooping panicle and the great number of its crowded cylindrical racemes. It was received many years ago from the Botanic Garden at Mauritius, when Mr. Duncan was Curator there, without any precise information as to its native country. Mr. Horne, the present Director of the Mauritius Garden, thinks it very likely the plant was brought from Rodriguez, but it was not seen in that island by Professor Bayley Balfour. Its nearest ally is the West African *Dracena arborea* of Link."—(*Bot. Mag., t. 6447.*)

**SALVIA ELEGANS.** *Nat. ord., Labiate.*—"Apparently a common and variable mountain plant of Mexico, as it is found amongst the collections of almost all the botanical travellers of that country, where it inhabits elevations of about 9000 feet. Seeing how vivid its colours are, it is singular that it should not earlier have been introduced into English gardens. The first person who appears to have cultivated it in this country is Mr. Wilson Saunders at his fine garden at Reigate, now dispersed, to the great regret of all horticulturists."—(*Ibid., t. 6448.*)

**TRILLIUM NIVALE.** *Nat. ord., Trilliaceae.*—"One of the dwarfest of the genus, and is distinguished by its distinctly petioled leaves and white petals without purple stripes. It inhabits woods in the North-western States from Ohio westward to Wisconsin. It flowered in the herbaceous department at Kew this present summer."—(*Ibid., t. 6449.*)

**RHODODENDRON LEPIDOTUM** var. **OBOVATUM.** *Nat. ord., Ericaceae.*—Native of Sikkim Himalaya. "In no way specifically distinguishable from Wallich's Nepalese plant, but it has larger more maroon-coloured flowers, and more copious glands on both surfaces of the leaf, this hardly differs from typical *R. lepidotum*. *R. lepidotum* is a native of the loftier interior ranges of the Nepal and Sikkim Himalaya, at elevations of 8000 to 16,000 feet. The specimen figured was raised from seed sent to the Royal Gardens from Sikkim by Mr. Gammie, which flowered in May of the present year. A stout or slender twiggy shrub, forming extended clumps, 1 to 4 feet high, branching from a woody tortuous rootstock."—(*Ibid., t. 6450.*)

**ALLIUM KARATAVIENSE.** *Nat. ord., Liliaceae.*—"One of the recent discoveries of the Russian explorers in Central Asia. It was first found several years ago by Sewerzow and Krause in the Karatau Mountains, east of Samarcand, and was gathered again in the summer of 1876 on the Alatau range by Dr. Albert Regel, who sent bulbs to his father at St. Petersburg, from whom we received it. Of old familiar types in the genus it most resembles *Allium nigrum*, but it is much dwarfer, with large prominently veined leaves of firmer texture, and smaller flowers with very acuminate perianth-segments. It is quite hardy in England, and flowered in the herbaceous ground at Kew in the month of May of this present year."—(*Ibid., t. 6451.*)

### THE INTERNATIONAL POTATO EXHIBITION.

SEPTEMBER 17TH AND 18TH.

THE annual meeting of the Society whose object is the improvement of the Potato was held as usual in the Crystal Palace, and the quality of the exhibits was good considering the season. In the fourteen classes enumerated in the schedule, all of which were open except Class B, seventy exhibitors appeared, staging about 2000 dishes. The judging should have commenced at ten o'clock, but it was considerably past that hour before any awards were made, and all the classes had not been judged

until past one, before which time the public had been admitted, much to the inconvenience of the reporters.

In Class A, for twenty-four distinct varieties, Mr. Peter McKinlay, Headley Lodge, Penge, was first with Rector of Woodstock, Beckenham Beauty, Late Rose, Woodstock Kidney, Vicar of Laleham, Climax, Triumph, Snowflake, Beauty of Kent, Womerleighton Seedling, Manhattan, Breadfruit, Trophy, Early Rose, Schoolmaster, International Kidney, Seedling 18 B, Shelburne, Beauty of Hebron, Blanchard, Wiltshire Snowflake, Magnum Bonum, Grampian, and Early King, all very good. Mr. Thomas Pickworth, Loughborough, Leicestershire, second; Mr. W. Kerr, Dargavel, Dumfries, was third; Messrs. Lott & Hart, Faversham, fourth; Mr. W. Ellington, West Rose Gardens, near Mildenhall, was fifth; and Mr. J. Akehurst, Davington Priory, Faversham, was awarded an extra prize. Thirteen entries.

In Class B, for eighteen distinct varieties, Mr. F. Cresswell, gardener, Stoke Park, Ipswich, was first with Covent Garden Perfection, Alpha, Brownell's Vermont Beauty, Woodstock Kidney, Blanchard, Porter's Excelsior, Snowflake, Oyster Kidney, Triumph, Brownell's Superior, Sutton's Magnum Bonum, Late Rose, International Kidney, Lady Webster, Norfolk Giant, Grampian, and Veitch's Improved Ashleaf. Mr. James Matthews was second, Mr. W. Finlay was third, Mr. W. Crump was fourth, and Mr. Wildsmith was fifth. Sixteen entries.

In Class C, for twelve distinct varieties, Mr. T. Pickworth, Loughborough, Leicestershire, was first with Lady Gordon, Beauty of Hebron, Blanchard, Breese's Peerless, King of Flukes, Triumph, Grampian, International, Early Vermont, Breese's Prolific, and Premier; a fine collection. Mr. C. W. Howard, Bridge, Canterbury, was second; and Messrs. Lott & Hart, nurserymen, Faversham, were third. Mr. Farquhar, gardener to Col. W. C. Gordon, Fyvie, N.B., fourth. Seventeen entries. One collection from Mr. James Clark, Cranemoor, Christchurch, arrived too late for competition. In Class D, for six varieties, Mr. T. Pickworth was first with Breese's Prolific, Trophy, King of Flukes, Early Vermont, International, and Beauty of Hebron, very even and good; Messrs. Lott & Hart were second; Mr. G. Martin, gardener to H. Day, Esq., Weybridge, was third; and Mr. James Matthews fourth. There were twenty-four entries. In Class E, for four dishes of distinct varieties, two round and two kidneys, Mr. F. Miller, Northdown, Margate, first with Snowflake, Ashtop Fluke, Radstock Beauty, and Blanchard, very good and even. Mr. James Matthews, gardener to E. Twopenny, Esq., Sittingbourne, was second; and Mr. Richard Dean, Ranelagh Road, Ealing, was third. Twenty entries. In Class F, for four distinct new varieties, Mr. Peter McKinlay, Headley Lodge, Penge, was first with Shelburne, Beckenham Beauty, Vicar of Laleham, and Woodstock Kidney; Mr. Richard Dean was second with Avalanche, Vicar of Laleham, Cosmopolitan, and Early Purple; Mr. R. Farquhar was third. Seven entries.

In Class G, for two varieties, one round and one kidney, Mr. J. Matthews was first with International Kidney and Porter's Excelsior, extremely fine. Mr. C. W. Howard was second with International Kidney and Schoolmaster, also large. Mr. W. Charles, Fyvie, N.B., was third with the former variety and Grampian; and Mr. James Miller, Hamshall Park Gardens, Newbury, was fourth. Twenty-three entries. In Class H, for a dish of any white kidney variety, Mr. W. Kerr was first with Schoolmaster; Mr. Richard Dean second with Porter's Excelsior, and Mr. J. Pallister, Topcliff, Thirsk, third with Woodstock Round. Twenty-two entries. In Class I, for a single dish of any coloured round variety, Mr. R. Dean was first with Lye's Favourite; Mr. J. Miller second with Blanchard; and Mr. T. Pickworth third with the same variety. Sixteen entries. In Class K, for a single dish of any coloured kidney Potato, Mr. W. Finlay, gardener to Col. North, M.P., Banbury, was first with International, very fine. Mr. H. Harris, gardener to C. Eversfield, Esq., Horsham, was second with Woodstock Kidney, and Mr. P. McKinlay third with Beckenham Beauty. Twenty-nine entries. In Class L, for a dish of any coloured kidney Potato, Messrs. Lott & Hart were first with a good dish of Trophy; Mr. W. Kerr, Dargavel, Dumfries, N.B., was second with Red Kidney, and Mr. F. Cresswell was third with Brownell's Superior. There were seventeen entries. In Class M, for a dish of Radstock Beauty, Mr. F. Miller, gardener to J. Friend, Esq., Margate, was first with fine tubers; Mr. J. Hughes, Eydon Hall Gardens, Byfield, second, very close in quality, and Mr. F. Cresswell third with smaller tubers. Ten entries.

In Class N, for the best dish of Sutton's Magnum Bonum, Mr. William Crump, gardener to His Grace the Duke of Marlborough, Blenheim, Woodstock, was first with fine tubers. Mr. W. S. Baldwin, New Brompton, Kent, was second; and Mr. George Masters third. Twenty-three entries. In Class O, for four dishes of field varieties, to consist of Paterson's Victoria, White Regent, White Fluke, and Scotch Champion, Mr. W. Kerr was first; Mr. R. West, gardener to J. R. Wigram Esq., Salisbury, second; Mr. W. S. Baldwin, New Brompton Kent, third; and Mr. C. W. Howard, fourth. Seven entries.

In the class for miscellaneous exhibits Messrs. Sutton & Sons, Reading, sent a large quantity of their Magnum Bonum and other Potatoes. Messrs. Harrison & Sons of Leicester also exhibited a

large collection of Potatoes. Messrs. Vilmorin, Andrieux, & Cie., Paris, contributed a large stand of Gladiolus blooms; Mr. Boller a collection of Cacti, &c., and Mr. H. Cannell cut flowers of Dahlias, Verbenas, and Tigridias.

### NOTES AND GLEANINGS.

MR. IGGULDEN writes as follows on the FRUIT CROPS IN ESSEX:—"It may be worth noting for the encouragement of the more northern readers of the Journal that Peaches, Nectarines, Apples, and Plums are ripening well. Royal George and Bellegarde Peaches on the south wall are nearly ripe and of good size and colour. We gathered our first dish September 11th from a west wall, the variety being the Grosse Mignonne. We shall have plenty of highly coloured Hunt's Tawny Nectarines by the end of the week. Green Gage and Purple Gage Plums on the west wall are excellent, though in rather small numbers. Both the above varieties, and also the Orleans, Victoria, and Goliath, are ripening fast, but all are cracking badly in consequence of the wet weather. The Winesour is the only Plum that appears unlikely to come to perfection. There is a good crop of them, and they are much prized for tarts, &c. Apples are ripening well, especially the Red Quarrenden, which are better than usual. Early Red and White Margaret have been over some time, but Doyenné d'Été and the Jargonelle are the only Pears that have ripened as yet. Williams' Bon Chrétien are of good size, and will I think be fit for use in about ten days. Where flies and wasps are troublesome to the fruit crops nothing excels bottles containing a mixture of sugar, water, and beer. We to-day counted the contents of one bottle hung up only two days, and there were upwards of four hundred flies and wasps in it."

— A CORRESPONDENT, "R. B.," writes as follows relative to the CROPS, &c., IN KING'S COUNTY, IRELAND:—"Crops of all kinds are very late, even Kidney Beans for the first crop are only forming their pods. Pears will be very small and probably of inferior quality. Apples are more plentiful, although the excessive rain and almost sunless weather must have a very deteriorating effect on their quality. Plums are a tolerably fair crop, but since the late downpour of rain a large quantity of fruit is dropping from the trees. From Saturday night it rained with very little intermission for thirty-six hours. Everywhere was flooded; a native declared in expressive language that it came down as "thick as himself." What will become of the farming peasantry I scarcely dare conjecture; the results must be very serious, as hay is scarcely all housed yet, and with the soft boggy land in a continual state of quagmire it will be no easy matter to save it in proper condition. Much corn is lying as flat as if the roller had been run over it. For fuel purposes peat is chiefly used; but then "turfs," as they are called, have been cut a considerable time, and sunshine is urgently needed to dry them, and altogether the prospect is a gloomy one both for gardeners and husbandmen."

— WITH a view of settling a disputed point as to whether CHRYSANTHEMUM TRIOMPHE DU NORD should be classed as a Japanese or a reflexed flower, the Kingston and Surbiton Chrysanthemum Society at a committee meeting recently held unanimously agreed that the variety in question should be allowed to be exhibited in all the classes for which prizes are offered in their schedule for Japanese collections, and not among the reflexed flowers, where it is usually to be found. That it is a pure reflexed flower no one disputed, but it was considered by the meeting to be as much a Japanese flower as Elaine, Peter the Great, and numbers of the other so-called Japanese varieties. Triomphe du Nord is one of the oldest varieties—a very good grower, free bloomer, of large size, and a most telling colour in a large collection of cut blooms.

— WE are informed that the ARBORETH COLLECTION OF ORCHIDS, collected by the late Mr. Miln, are to be sold at an early date.

— IN the glass houses attached to the Finsbury Park we recently noticed a plant of the peculiar and rare MARTYNIA PHOSCOIDEA in flower. This is a North American annual related to the Sesamums and included in the natural order Pedaliaceae. The flowers are large and curiously spotted, and emit an odour that may be considered agreeable by some persons, although the majority, perhaps, would not find it very pleasant. The leaves are large, cordate, and opposite, and the flowers are clustered near the summit of the stem. The strangest part of the plant is the fruit, which has when fully ripe two long curled horn-like processes. The fruit is rarely ripened

in England, but the plant mentioned is bearing some in a young state.

— MR. WILLIAM NICHOL, who has for upwards of twelve years been gardener to T. H. Powell, Esq., of Drinkstone Park near Bury St. Edmunds, has been appointed by Lady Gage as agent on her estate of Hengrave, also near Bury St. Edmunds. Mr. GEORGE PALMER, gardener to Col. Tremayne of Carlew, Perranarworthal, Cornwall, has been appointed as gardener to T. H. Powell, Esq., of Drinkstone Park. Mr. S. H. BEECH has succeeded Mr. Marsh as gardener to the Marchioness of Bath, Muntham Court, Worthing. Mr. THOMAS CARLTON, Ashted Park, Epsom, succeeds Mr. Don as gardener to Sir Charles Mills, Bart., The Wildernesse, Sevenoaks. Mr. W. CLAREY, Wilderwich Park, succeeds Mr. McBean as gardener to W. R. Arbuthnot, Esq., Plawhatch, East Grinstead; and Mr. W. GOODALL, late foreman at The Grange, Alresford, succeeds Mr. Beale as gardener to C. Hambro, Esq., Milton Abbey, Blandford.

— WE have received from Fisher, Clark, & Co., Boston, samples of their WATERPROOF TREE AND PLANT LABELS. They are very neat in appearance, and though made of specially prepared paper appear to be strong and durable. When written on with pencil and the writing is placed under a running tap the water has not the least effect on it. It is an inexpensive and useful label.

— MR. E. COOK, writing to us from Cornwall, states that the favourite mode of ERADICATING SLUGS in that county is by laying heaps of grains fresh from the brewers where the slugs abound, and three hours after dark spreading quicklime over the grains, which will be quite covered with slugs. By adopting that practice he has destroyed thousands in a night, and by repeating it half a dozen times during the summer his crops sustain no injury. It is, he observes, important that the grain must not lie on the ground for more than three hours after dark before the lime is applied, or the slugs will have finished their meal and departed. The same grains will not do for two nights, but must be used in a fresh state.

— MANY beautiful plants are now flowering in the HERBACEOUS GROUNDS at Kew that merit a place in every garden where this class of plants is specially grown. Echinacea angustifolia is a very attractive plant, as indeed are all the species of this genus; it grows 3 to 4 feet high, and bears numerous large conical heads, the outer florets of which are ligulate, reflexed, and bright rosy pink in colour, the central florets being darker in colour and tubular. It is a native of North America, and was introduced about twenty years ago. Linaria maroccana, a pretty annual from Morocco with linear leaves and dense racemes of bright purplish lake flowers, the lower lip being tinged with yellow. Chelone obliqua is, next to C. glabra, the oldest species of Chelone known in our gardens, having been introduced from North America about 1750. The lance-shaped leaves are opposite, sessile, and very dark green; while the large rosy flowers are borne in dense terminal spikes.

— WE regret to hear that Mr. DAVIS, for forty years gardener to Viscount Bridport at Cricket St. Thomas, Chard, Somersetshire, has met with a fatal accident by falling from a ladder when decorating the ball-room. Mr. Davis was highly esteemed by the family which he served so well, and by all who enjoyed his acquaintance.

### FRENCH NOTES.—No. 1.

#### EXHIBITION OF ROSES, &c., AT BRIE-COMTE-ROBERT.

EVERY Rose-grower has heard of Brie and its rosy surroundings, and they have known that it has Rose shows, for have they not grown Exposition de Brie for years? and as I had received a courteous invitation as Secretary of the National Rose Society to "assist" at its Show this year as one of the Jury, and had the time at my disposal, I consented to go, especially as I was very desirous of seeing my dear old friend M. Souchet of Fontainebleau, of whose increased infirmities and suffering I had heard very sad accounts, and so on Saturday week I was enabled to carry out my wishes. Brie is a small town of about three thousand inhabitants, and about twenty-three miles from Paris by the direct Vincennes route, but it was not thus that I reached it. I was at Fontainebleau, and was told by my friends there that if I went towards Paris as far as Comte-la-Ville I should find an omnibus that went from there to Brie, which was about four miles off; so on Saturday morning I left Fontainebleau, believing (although I had some slight misgivings on the subject) that I should reach Brie by one o'clock. When I arrived at Comte-la-Ville there was not a ghost of an omnibus to be seen. Was there no way? Oh, yes; there



was a *voiture à volonté*, but, alas! it had started off early in the morning to Brie, and would not be back for some time. What was to be done? The innkeeper was away with the fly, but his wife rose to the occasion. Would monsieur object to a *charrette*? She would drive their cart horse. We should meet the fly, and then could get into it. I was glad to accept the offer, although the *charrette*, which was simply a market cart, was all but springless, and the seat was covered with American cloth, from which one continually slipped, and so, accompanied by a female friend of madame's, who evidently came for the fun of the thing, I in a most undignified manner started for Brie. My companions were merry enough, and what between the jolting, laughing, and talking, one's sides ached, so that about halfway I was glad to see the innkeeper returning. We got into the fly (a sort of sociable), madame taking the reins, and poor Mouton (why do the French so often call their horses this?) had to retrace his steps to Brie, where we arrived at a little before two, and thus far too early for the Exhibition. I was glad to recognise Mr. William Paul and

Mr. Arthur Turner, who were to act with me, and three French Judges, MM. Lacharme and Guillot, fils, who is now a grey-headed old man, and M. Vigneron.

The Exhibition displayed the usual excellencies and defects of a French show. The tent was in the shape of a T, with a long corridor at the upper end of the cross of the T, in which were arranged the collections of fruit and vegetables; some fine groups of plants contributed by M. Bergman, gardener to Baron Rothschild at Ferrières, occupying the central position, to which they were fully entitled. At the further end of the tent was a rockery, from which issued the inevitable waterfall and rivulet running through the centre of the tent, and very prettily arranged. The Roses were in beds, the blooms being sunk in bottles and then the surface covered with moss, giving it a very pleasing appearance. Nor was all idea of beauty confined to the inside of the tent. The ground on which it stood was part of a common only six weeks ago; it was then handed over to the Committee, the space enclosed, and round the tent a garden was formed with

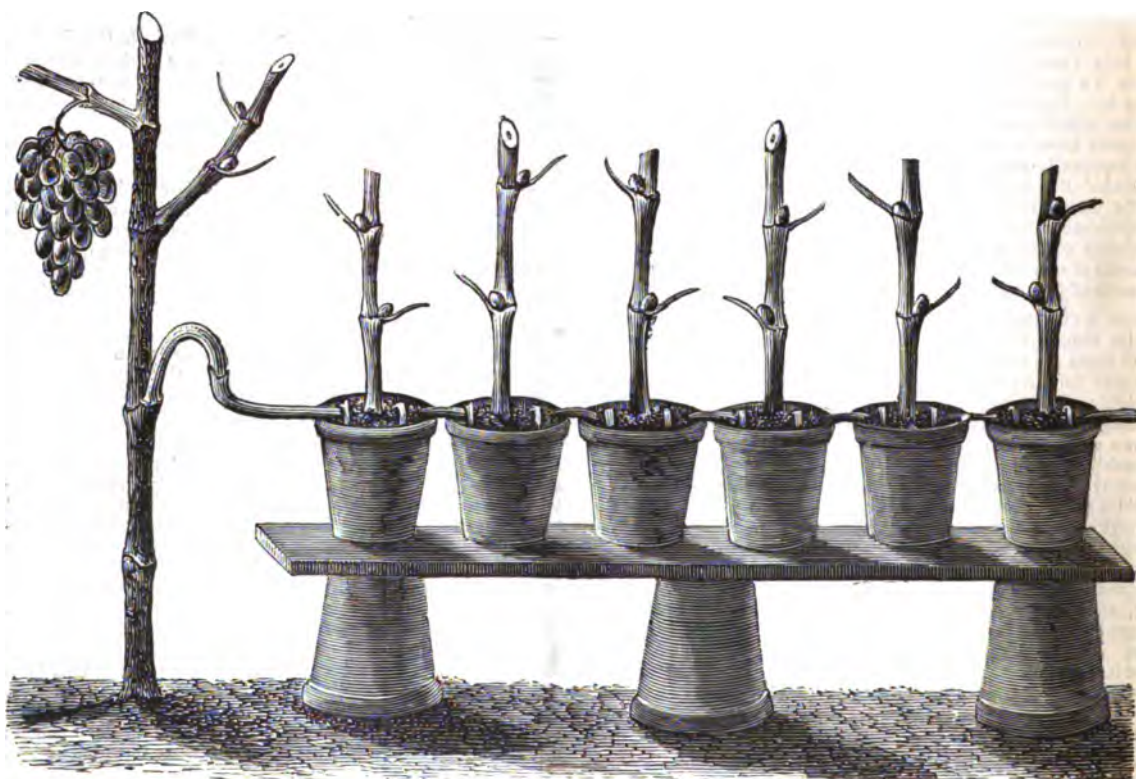


Fig. 26.—RAISING VINES AT COMBE ABBEY (See page 223).

its beds of Geraniums, Phloxes, &c., and its shrubberies of trees; grass seed was sown, and a pleasant spot was the result of the labours of the Committee of the Horticultural Society of Melun and Fontainebleau, under whose auspices the Exhibition was held.

The grand prize was worthily awarded to M. Bergman for six collections, consisting of some fine *Dracenas*, *Crotons*, and variegated plants; a fine central group, consisting of *Palms*, *Orchids*, *Nepenthes*, *Anthuriums*, *Tillandsias*, *Begonias*, a small group of *Azaleas Comtesse de Flandres*, *Ceres*, *Princess Charlotte*, and *Madame Dominique Vervaeke* nicely in flower (but how was it done at this time of the year?) and for some very fine *Grapes*, consisting of *Frankenthal*, *Chasselas de Fontainebleau*, *Chasselas Rose*, *Black Prince*, *Alicante*, *Gromier du Cantal*, *Foster's Seedling*, *Muscat of Alexandria*, &c.

The corresponding prize for nurserymen was given to M. Scipio Cochet for groups of stove and greenhouse plants, *Bromelias*, *Ferns*, *Roses*, *Begonias*, and *Conifers*. M. Leroy received a medal for a fine collection of about 300 varieties of *Pears* and 200 of *Roses*—most wonderful considering the season, which has been as unpropitious in France as it has been with us. There were some cut blooms of *Dahlias* in boxes, one stand having the number of the flower neatly pinned on a small piece of paper on the eye of the bloom! *Asters*, *Gladioli*, and certainly the most splendid lot of double *Zinnias* I have ever seen, and I have seen a good many both in France and England. I have seen them as double, but never so large; some of them were as large as a medium-sized *Dahlia*, and fully up in the centre. These were exhibited by M. Pernet, nurseryman of La Varenne.

And now as to the *Roses*. Had I not known France and French exhibitions I should have been most grievously disappointed; but I was fully aware that *Roses* were never exhibited in France in anything like good form as we consider it, and that it was not to be expected in the month of September of such a season as this. It will be sufficient for me to say that I do not think there was in the Show a *Rose* we should have given third place to in any close competition. The prizes evidently aimed at quantity rather than quality, as they were offered for two hundred, one hundred, fifty, and twenty-five varieties. Quantity there was, but many of the *Roses* were utterly undistinguishable, and might also have borne any name the grower chose to affix to them. It settled completely to my mind the question as to whether we cannot substitute some more artistic plan and better arrangement than our own. Where there is competition I emphatically say, No! If you want to make a pretty sight you may do it with *Roses* as shown to-day, but the most lamentable confusion was the result. Let me take one instance: one bed contained the entries of one exhibitor for three different prizes, and two of these were arranged in circles round the bed, so that you had to find out how many rows went to one and how many to another. "Order did not reign" at Brie, and had it not been for the efforts of the worthy son of a worthy sire, our good friend Ernest Bergman, it would have been impossible to have got through the judging at all. After we had decided as to the winners of the prizes, we had then to decide as to their value, whether they were to have gold, silver gilt, or silver medals, and the sort of medal, of which there were three or four different sizes of each kind. I cannot say that my



experience is "they manage these things better in France." What a waste, too, of time! The whole Show was not so large as many of our provincial ones, yet the whole of Saturday was given up to the preliminary work of judging, &c. It was not open to the public until the following day, and was to remain open on Monday. In what sort of condition could the Roses be in that hot tent by that time? Were there no seedlings exhibited? Yes, M. Lacharme showed a light-coloured Rose of the Capitaine Christy style, but lighter in colour, I believe a cross between Victor Verdier and Sombreuil. It was, however, shown in but poor condition, and we could only judge hopefully of it, especially as its owner (a good judge) spoke very highly of it. There was also a red Rose shown by somebody else, which seemed promising, but it was of a shade of colour of which we have a large number, and so the Judges, as it was not in very good condition, made no award concerning it. I wish that I could have given some more satisfactory information to the readers of the Journal, but one cannot alter facts. One great cause of the difference between the shows of the two countries is the almost entire absence of amateur exhibitors. Amongst Roses there was not one, and until this alters it is absurd to compare the shows of the two countries.

But if there were failure in any way in the Show—and taking it from the French point of view there was anything but that, in fact most creditable to so small a place—there was none whatever in the banquet which followed, which was held at the Hôtel de Grâce de Dieu (what a name for an hotel!), and to which upwards of seventy sat down, presided over by M. Rose Charmeux, the President of the Society. The dinner was of the most recherché character, and I could not but think of what a contrast it was to one that one would be set down to in a small county town in England, while the vivacity and the talking were equally in contrast with the sober solemn way in what a company of the same number and character would go through their dinner with us. Well, we have high authority for saying the Ethiopian cannot change his skin; we cannot change the nature and characteristics of race, and hence we must learn to respect each other in our separate lines; even if we do take our pleasures sadly, still they are pleasures to us.

The Society is happy in having among its more prominent members such men as M.M. Camille Bernardin and Eugène Delamane. More indefatigable and untiring men I never saw. Need I say that their courtesy was on a par with their energy, and that the English visitors had every reason to feel gratified with their reception? The banquet was not over when we were obliged to leave. We got into a vehicle that was intended to hold three, but in which five managed to get; we had a jibbing horse, the cart came down on the springs with some ominous growls, and we were glad to be deposited at the railway station.

During the dinner M. Camille Bernardin announced to me that the "Journal des Roses" wished to present a medal similar to the one offered at Brie, a very handsome one, to the National Rose Society, to be competed for at our Exhibition at the Crystal Palace next year, I believe for the same class—twenty-four Roses, three of each variety, one expanded, one half blown, and the other in bud.

A pleasanter day, taking it all in all, I have not spent for some time, and shall have cause gratefully to remember Brie and its Exposition.—D., Deal.

#### NOTES ON STRAWBERRIES.

In reply to Mr. Thomas Forman on page 214, where he begins by suggesting that those who give their Strawberry experience should state soil, climate, &c., I might suggest it would have been as well if he had carried out his own suggestions, especially as he has written in a more than usually critical tone.

I never give notes about Strawberries that I have tried only a year. I have had Coxcomb for twelve or thirteen years, and Rivers' Eliza four seasons. Under certain conditions Coxcomb might be a medium season variety, but I have invariably found it later than Sir Joseph Paxton, Lucas, President, or in fact than three-fourths of about fifty varieties of Strawberries I have tried. My present collection with recent additions, after cutting out inferior sorts and duplicates, numbers thirty-one varieties. I planted Coxcomb in rows between Gooseberry bushes and Currants closely pruned, and I gathered some Strawberries only two days ago. Rivers' Eliza is the better Strawberry and latest I know for a fine crop, very large, very prolific; with me the crop from only last year's plants is extraordinary. Traveller and Newton's Seedling are the other decidedly late Strawberries, all of which this late year I gathered in September. I have no doubt that by picking off early blossoms, or all June blossoms off some sorts, it would be quite possible to have fruit in the end of September and October; but query, May we not have too much even of a good thing, just as I see many gardens spoilt by the anxious desire to have

a bunch of Grapes in all months, in season and out of season? —C. P. PEACH.

#### CAMPANULA ISOPHYLLA.

I SEND you a spray of what I consider one of the most charming basket plants in cultivation. It is grown in cottage windows in this district, and is admired by everybody. It has been named as above by the authorities of Kew, but I am



Fig. 27.—*Campanula isophylla*.

doubtful if it is the true species, but only a variety of *C. isophylla*. In growth it is pendant, and the sprays become a mass of beautiful porcelain blue flowers, which continue in beauty for a considerable time. If you engrave the spray, I am sanguine that you will place before your readers one of the most charming plants that can be grown either for brackets, the margins of stages, window boxes, or various other decorative purposes. It is of the easiest possible culture, and is nearly or quite hardy.—J. B. B., North Riding.

#### THE LONDON PARKS.

##### BATTERSEA PARK.

THE picturesque park on the banks of the Thames opposite Chelsea is widely noted for the tasteful manner in which sub-tropical and carpet bedding are carried out, and even in this adverse season there is much to admire. The great clumps of Cannas are not quite so imposing as usual owing to the

diminished growth of the plants, and the same may be said of the other exotics employed in the subtropical garden, such as Tree Ferns, Palms, and Musas, but the tall-growing species of Polygonum, particularly *P. Sieboldii*, are especially vigorous and striking. Funkias have also succeeded well here this season, as, indeed, they have in most localities, abundant moisture being evidently their chief requirement. Both *F. subcordata* and *F. Sieboldiana* are grown, and the freedom with which they flower and the fine foliage (particularly of the latter species), render them extremely serviceable for edging large beds of Cannas or similar plants. A bed of the graceful *Bonaparteas* with a central *Dasylium*, in a carpet of *Sedum glaucum*, *S. acre elegans*, and *Alternanthera amœna* is pretty, the bright colour of the latter pleasantly relieving the softer hues of the *Sedums*. In another portion of the subtropical garden is a charming bed of Fuchsias and *Kalosanthos*, interspersed with the brilliant showy *Tigridia Pavonia*, and near to it is a clump of the distinct *Polyommia grandis*, surrounded by *Veronica Andersonii* variegata, *Pelargonium Robert Burns*, and *Sempervivum tabulaforme*, the spaces between the plants being occupied by *Heliotropes*. An elliptical bed of *Grevillea robusta* is also noticeable. Beneath the *Grevilleas* is the pretty foliage of the variegated Vine, and around them are bands of *Lonicera reticulata aurea*, *Alternanthera magnifica*, and *Stellaria graminea aurea*.

Of the carpet beds those on the east side of the subtropical garden, near the lake, are deserving of notice. Three beds there are always attractive—a small circle between two long beds. The two long beds are similar in design. In the centre are small ellipses of *Alternanthera paronychoides*, margined with *Kleinia repens* in a ground of *Mentha Pulegium gibraltaria*, and surrounded by bands of *Alternanthera amœna*, *Sedum glaucum*, and an edge of *Echeverias*. The circle is rather dull in appearance, for the *Geranium molle aureum* that occupies the centre intermixed with *Lobelia* has not coloured well; the edging consists of *Herniaria glabra* and *Leucophyton Brownii*. A short distance from the *Tigridias* already mentioned is a circular bed with a pretty design in *Alternanthera amœna* on a ground of *Mesembryanthemum cordifolium variegatum*, *Leucophyton Brownii*, and *Pyrethrum Partheniifolium aureum*, edged with *Sedum glaucum* and *Echeverias*, a plant of *Sempervivum canariense* occupying the centre; and near by is another circle with a centre of *Alternanthera versicolor*, surrounded by bands of *Mesembryanthemum Boltii*, *Leucophyton*, *Alternanthera amœna*, *A. paronychoides*, the golden *Stellaria*, *Sedum glaucum*, and *Echeverias*—a most pleasing and artistic combination of colours. The oblong beds near the mounds covered with *Antennarias* are tasteful; a chain of *Pyrethrum* extends down the centre of each, and the small circles thus formed are planted alternately with *Alternanthera amœna* and *A. versicolor*, then follows a broad band of *Mentha* and an edge of *Feverfew*, the elegant *Stonecrop*, *Alternanthera amœna*, and *Echeverias*. In addition to those we have noticed the visitor will find several pretty designs round the refreshment rooms near the river, and the "coffin beds" on the road to the Albert Bridge entrance are worthy of attention, and equally so are the grand lines of *Anemone japonica alba*; the *Yuccas* (*flaccida*), too, near the rockery are very beautiful. The general appearance of the park is excellent, and reflects great credit upon Mr. Rogers and his able assistants.

#### KENNINGTON PARK.

Although this park is of small extent the bedding merits some attention, owing to its neat and bright appearance and the simplicity of the designs. The principal beds occupy that portion of the park near the Kennington Road, and are in two large oblong turfed divisions, one on each side of the lodge, and another extends down the centre of the park at right angles with the above. The central space in each division is sunk below the level of the paths, and the large beds there situated are planted with subtropical and flowering plants; on the higher portion are small circles and long beds of flowering plants, and at each angle is a carpet bed. Each opposite pair of the latter are similar in design, and all are pretty. One has a ground of *Stellaria graminea aurea*, a central circle of *Alternanthera versicolor* surrounded by fine lines of *Feverfew* and *Herniaria glabra*; two smaller circles of *Alternanthera amœna* on each side of this, and an edge of the same *Alternanthera* and *Sedum glaucum*. Another bed has, in place of the *Stellaria*, *Mesembryanthemum cordifolium variegatum*, small circles of *Alternanthera amœna*, and bands of *Mentha*, *Feverfew*, and *Alternanthera versicolor*, margined with *Sedum glaucum* and

*Echeverias*. The beds of flowering plants are mostly edged with *Pelargonium Daybreak*, *Viola Blue Bell*, and *Stellaria graminea aurea*; the centres being occupied with *Pelargoniums*. One long ribbon border near the road is very attractive. At the back is a line of *Polygonum orientale*, in front of that *Anemone japonica* and *hortensis* flowering most profusely; next rows of *Pelargonium Edward Sutton* and Mrs. Holden, and a mixed edge of *Lobelia*s and double *Pyrethrums*. This park is under the direction of Mr. Rogers, but the management is entrusted to Mr. Brown, who maintains it in excellent condition.—L. C.

#### HARPENDEN HORTICULTURAL SOCIETY.

THE first Exhibition of this newly established Society was held on Thursday, September 11th, in Rothamstead Park, Harpenden, and within the shadow of the famous laboratory of Messrs. Lawes & Gilbert, whose patient and long-continued researches in the cause of agriculture have conferred immense benefits, not only on all cultivators of the soil, but on the whole civilised world; and it is somewhat surprising that long ere this the pursuit of practical horticulture, so closely allied with the botanical work of the Rothamstead Institution, should not have received public recognition in the locality. However, the matter has at length been taken up by several able and spirited horticulturists of the neighbourhood, and a Society formed under the Presidency of Mr. Lawes, the Committee having also the valuable services of Lieut.-Col. Durnford as Chairman, and the success achieved on Thursday augurs well for the permanency of the gathering.

The principal marquees were tastefully decorated, and the *tout ensemble* of the largest, which was devoted chiefly to plants, was very effective. The plants, although not large nor extensively shown, contained a very good collection from C. R. Fenwick, Esq., High Firs, Harpenden (gardener, Mr. Underwood), who was first. Mr. Fenwick was also first for six foliage plants with well grown and healthy specimens of *Bonaparteas gracilis*, *Yucca curvifolia* variegata, *Croton pictum*, *C. Nelsoni*, and *Lantana borbonica*. The best six Ferns also came from Mr. Fenwick, who had handsome and well-coloured plants of *Adiantum trapeziforme*, *A. coccineum latum*, *A. cuneatum*, *Asplenium Nidus*, *Gymnogramma chrysophylla*, and *Pteris cretica albo-lineata*. For six *Tuberous Begonias* Mrs. Warde, Harpenden (gardener, Mr. J. Elmer), was first, having fine plants of the best varieties. In Fuchsias a fine bushy plant of *Avalanche*, with enormous double purple flowers, in the first-prize lot from Mrs. Warde was very attractive. An excellent collection of *Caladiums*, not for competition, came from Mr. W. Valentines of Bramingham, Luton. *Coleuses* were well shown and in high colour, and amongst the *inter alia* was a remarkable Orange tree about 2½ feet high from H. T. Hodgson, Esq., Harpenden, literally laden with clusters of large ripe fruit, said to be the *Myrtle-leaved* variety, but the specific name of which I could not ascertain. A peck measure would hardly contain the fruit, which were all ripe. Mr. J. Watson of St. Albans showed some good seedling *Begonias* of his own raising, in all shades from pure white to deep crimson. Six *Cockscombs* from Mr. Toulmin showed good cultural skill.

Cut Roses were staged, but not for competition, by Messrs. William Paul & Son of Waltham Cross and Mr. E. P. Francis of Hertford, and both being "at home" the blooms were fresh and the colours good. Messrs. Paul had *Alfred Colomb*, *Star of Waltham*, *Le Havre*, *Gabriel Tournier*, *Charles Lefebvre*, *Louis Van Houtte*, *Baronne de Rothschild*, *Niphetos*, *Souvenir d'Elise*, *Royal Standard*, *Catherine Mermet*, *Souvenir d'un Ami*, *Madame Victor Verdier*, *Duc de Montpensier*, and *Marie Baumann* in good form, also a small, well-shaped, clear white bloom of *Mabel Morrison*. There is, however, less in this Rose than its reputed derivative the *Baroness*, and it is not up to the show standard although a good garden Rose. It is wonderfully suggestive of my own *Princess Louise*, which was raised by crossing *Madame Vidot* by *Virginal*. Messrs. Paul also showed *Duchess of Bedford* in very fine autumn condition, and it is satisfactory to find so good a Rose also a free autumnal bloomer. Mr. Francis had clean and high-coloured blooms of *John Hopper*, *Anna de Diebach*, *Paul Neyron* (almost invariably fine and in show condition in the autumn), *Duke of Edinburgh*, *Louis Van Houtte*, *Dr. Andry*, and *Milla Marie Verdier*. For twelve *Roses*, single blooms, Mr. W. Valentines, Bramingham, was first, and for the twenty-four blooms *A. Flower*, Esq., The Hyde, Luton, was to the front, his stand containing good blooms of *Maréchal Niel* and *Baron Haussmann*.

*Dahlias* were for the season respectably shown by Mr. J. Henshaw of Harpenden, who was first both for twelve and six blooms. Mr. Henshaw had also an extra stand of *Pompon*, *Liliputian*, and other sorts, which included *Cannell's single Paragon*, very striking, especially placed in contrast to the "bunchy" *Mons. Chauvière*. For twelve *Victoria Asters* and twelve *Quilled ditto* Mr. Flower was first, and for the former Mr. Henshaw second. For six *Victoria Asters* Mr. Henshaw was first. The class for dinner table decorations was well contested, the regulations requiring tables 5 feet by 3 feet 9 inches completely laid for six

persons so arranged as to show the best means of utilising fruit and flowers in their adornment. In most of the exhibits scarlet and masses of bright colour were dominant and the tables were profusely loaded, but in the display made by Miss Henshaw lightness and the lighter tones prevailed. Miss Martha Elmes of Colewood, Harpenden, was placed first, Mrs. J. Mardale of Harpenden second, and Miss Henshaw third. In cut flowers some fine Zonal Pelargoniums were shown by Mr. Fenwick; Masterpiece, Kleon, and Vivid being very fine, the individual blooms of the former exceeding 2 inches in diameter.

Fruit was not largely shown, but the collection from Mr. C. Pollard, gardener to H. J. Toulmin, Esq., Childwick Park, was very creditable. Mr. Pollard showed Black Hamburgh Grapes, St. Michael Oranges (of refreshing odour and colour), Pine Apple Nectarines, Green Gage Plums, and Morello Cherries. The Black Hamburgh Grapes from James Lyde, Esq., Ayott, St. Lawrence (gardener, Mr. Chuter), and the single bunch of Golden Queen from Mr. Fenwick were excellent. For a Melon Mr. J. Oakley, Lawrence End, Luton, was first with a large and prime Little Heath, and Mr. Valentines second with Scarlet Gem.

Vegetables were good, and especially in the cottagers' department, the tent allotted to the latter being well furnished; Veitch's Autumn Giant Cauliflower being notably prominent and first-rate, but upon the whole the vegetables of Hert's were not equal to those from the adjoining county of Bedford. For the collection in the gardeners' class Mr. C. Sibley, gardener to H. T. Hodgson, Esq., Harpenden, was first. For a brace of Cucumbers most of the competitors staged Telegraph in fine condition, and in several instances 20 inches long, the first prize being awarded to Mr. Valentine, and the second to Mr. Toulmin. Onions were large, but in nearly all cases unsound. The best Peas shown consisted of Supreme, Veitch's Perfection, Omega, Ne Plus Ultra, and Connoisseur. Magnum Bonum Potato was also generally good.

In the miscellaneous exhibits Mr. J. Willis of the Rothamstead Laboratory, the courteous Secretary of the Society, showed forty admirably mounted botanical specimens of dried British plants, evincing great neatness in manipulation. The Judges testified their appreciation of his work by awarding an extra prize. Mr. J. Watson of St. Alban's showed a very simple and cheap suspension boiler, a great improvement on the old wedge-shaped apparatus. The boiler is said to be safe and lasting, and so it appears, and is said can be easily kept going for twelve or fourteen hours without attention—a veritable boon to amateur stokers. The management of the Harpenden Show was unexceptional, and the Show as a first attempt a success. I trust it may be so financially, but this has indeed been a bad season for the experiment of a new show when so many of the old societies will, from want of funds, be compelled probably to close their doors.—T. LAXTON, Bedford.

### THE ROSE ELECTION.

I SHALL be glad to receive all replies to the two questions at the latest by the 27th of September. I repeat the questions. 1, Newer exhibition varieties. Name the best thirty-six Roses for exhibition purposes introduced since 1871, not including that year; distinguish the best and second best twelve. 2, Name the thirty best garden Roses for all purposes, distinguishing the best and second best ten.—JOSEPH HINTON, *Warminster*.

### NOTES ON VILLA AND SUBURBAN GARDENING.

DAMP foggy mornings and shortening days warn us that the winter is again approaching, although we can truly say that as yet we have had no summer; it is now too late to expect any, and it is necessary to make preparations for another year, which we all hope may be drier, brighter, and warmer. Flower beds have not been so bright and gay as usual, the Potato crop has in many instances been very nearly destroyed, Vegetable Marrows have not set freely, a total absence of ripe Tomatoes, French Beans very late, and many other things entirely out of season. Notwithstanding these drawbacks we must commence again, and the commencement of a new year in the garden begins with the autumn. It is before the summer occupants are removed or destroyed that we should note the faults and failures of the past with a view to finding a remedy in the future. It is much easier to learn this in the garden by actual observation than anywhere else. These combinations of colours which are most pleasing should be noted. These are minor points, which if carefully done now will save an amount of labour, thought, and time another year. Cuttings of most plants may yet be taken off, and if placed in heat will strike readily. Should there be any fear of frost and the old plants are wanted for another season they should be lifted and placed in the smallest pots it is possible to place their roots in. Those cuttings struck in the open ground should be potted at once.

**GREENHOUSE.**—This house should now be prepared to receive the winter occupants. The stages and all woodwork should be well cleaned, and such plants as *Ericas*, *Epacrises*, *Azaleas*, Ca-

melias, &c., that have been placed out of doors to ripen their growths should now be returned. Bulbs for early forcing should be now potted. The small Roman Hyacinth is invaluable for blooming towards Christmas, when flowers are very scarce. The flowers, which are smaller than the ordinary Hyacinth, are produced in great profusion, each bulb throwing up three or four spikes of delicately scented clear white blossoms. Five or six bulbs should be potted in a 6-inch pot. Light loam, plenty of sand, and rich leaf soil or dried cow manure is suitable. Place the pots in a frame or near a wall, and cover them over with cocoanut fibre to the depth of 4 or 5 inches. In the course of a month if examined the bulbs will be found to have commenced growing. The strongest should then be removed to the greenhouse for a few days prior to introducing them to a warmer structure to accelerate their flowering. If cut blooms are required a number of bulbs may be placed closely together in shallow boxes, and when in bloom may be moved to a cool greenhouse or conservatory to cut as required. If a good display of Hyacinths is desired to follow the Roman the single varieties are, as a rule, by far the best to depend upon. Many good varieties are to be purchased tolerably cheap. The following are all reliable varieties, and as some of them are naturally earlier in blooming than the others they will form an uninterrupted succession:—Alba Maxima, Baroness Van Tuyll, Grandeur & Marville, Madame Van der Hoop, and Queen of the Netherlands. Of the various shades of blue, Argus, Baron Van Tuyll, Charles Dickens, Grand Lilas, Couronne de Celle, Leonidas, Marie, and Mimosa. Of single reds, Gigantea, Mrs. Beecher Stowe, Norma, Ornement de la Nature, Solfaterra, and Von Schiller. The above are chosen principally for their cheapness. The whole of them will, if good bulbs are received and grown well, throw up handsome flower spikes, more particularly the blue varieties. For eighteen varieties for exhibition the following may be selected:—Fabiola, creamy pink; Gigantea, delicate rose; Macanlay, rose, with carmine stripes; Von Schiller, deep salmon pink; Alba Maxima, pure white; Grandeur & Merville, bluish white; La Grandesse, pure white, and the finest of its class; Queen of the Netherlands, pure white; Blondin, silver-grey; Charles Dickens, lilac; Cesar Peter, pale lavender; De Candolle, reddish lilac; General Havelock, nearly black; Grand Lilas, porcelain blue; King of the Blues, dark blue; Lord Derby, clear azure blue; Ida, clear primrose; and Koh-i-Noor, a semi-double, bright salmon pink. Six good single Tulips are to be found in Joost Van Vondel, Keyzers Kroon, Proserpine, Vermillon Brilliant, White Pottsbaker, and Van der Near. Both the double and single varieties of Van Thols and the Tournesols are most useful for forcing. But all these make but a fleeting display when forced very rapidly. They should be removed to a colder house as soon as the flower buds are discernible. Both the double Roman Narcissus and Paper White are excellent for forcing if potted at once, but Gloriosa, Grand Monarque, Newton, and Soliel d'Or are grand varieties to form a succession. The most important point with all bulbs is to pot them early.

### WORK FOR THE WEEK.

#### KITCHEN GARDEN.

POTATOES are in some localities much diseased. Any yet remaining in the ground should be taken up in favourable weather, separating the diseased tubers and those required for planting. The latter tubers should be placed thinly on a dry floor or on lattice shelves in a cool, airy, and dry shed. The late varieties will not be ready for lifting for some time. The vacant ground may be forked over and planted with early Cabbages, which will be very acceptable as the Potato supply is likely to be short; indeed, a good supply of greens in spring is sure to be appreciated. Thinning late Turnips must be attended to, and winter Spinach and Onions will require similar attention. The principal object in this department will be clearing the ground of Peas and Beans and destroying weeds. If Lettuce seed was sown as advised in late July the plants will now be fit to thin out to about 6 inches distance apart, and if the plants are in the open they should be pricked out in frames so as to become well established before winter, but the lights must not be employed until the weather is frosty. Similar remarks apply to Endive for spring. Lettuces and Endive may also be planted at the foot of walls so as to afford an early spring supply. Onions that have been taken up should be placed under cover and stowed away thinly in a dry room or on shelves, stringing the larger bulbs or tying them in bunches. Take advantage of dry days to tie up Lettuces and Endive and to earth up Celery as required. Sow Radish seed upon a warm border, which with protection in severe weather will afford a supply till a late period. Mustard and Cress must soon be sown under glass.

**Forcing Department.**—A first sowing of French Beans should now be made in 9 or 10-inch pots. Fill the pots three parts with rich rather strong loam. Place six or eight beans around the sides of each about an inch deep, and stand the pots in a house or pit, the nearer the glass the better. When the plants are above the rim of the pots earth up with some rich compost. The temperature should be 60° at night falling to 55° in the morning;



60° to 65° by day by artificial means, and 75° to 80° with sun and air. Water will only be required moderately until the plants are flowering, when it must be freely supplied, and also weak liquid manure. Osborn's Forcing is one of the best varieties.

#### HARDY FRUIT GARDEN.

In an ordinary season but little requires to be done in this department at the present time, with the exception of attending carefully to ripening fruit of various kinds. This year the wood continues growing, and must be restrained by frequent stopping. Peaches and Nectarines are growing very vigorously. Shoots intended for next year's bearing should be stopped at a length of about 12 inches, which will to some extent act as a check on the growth, laterals being pinched at the first joint. Although root-pruning under ordinary circumstances should be performed when the leaves are beginning to fall, in seasons like the present it is better done earlier, with a view to check late growth and secure if possible the ripening of the wood. After the fruit is gathered the soil should be removed from the roots of those trees that are growing too vigorously, shortening back some of the strongest roots, and take out a trench parallel with the wall, the distance being regulated by the vigour of the trees. The old soil should be picked out from amongst the roots without disturbing them too much, and be replaced with fresh rather strong loam, to which has been added a tenth of chalk or old mortar rubbish and a sprinkling of half-inch bones. The trees should be syringed every day for a few days if the weather be bright, and a good watering given the roots after adding the fresh material, mulching the surface with short manure. Plums and Apricots may be treated in a similar manner, they being too vigorous for fruiting satisfactorily. It is important that it be done whilst the trees have leaves, so that fresh roots may be emitted before winter ready to support the blossom and fruit in due season. Apples, Pears, and Plums should be gathered as soon as they are fairly ripe. If gathered too soon they shrivel, and if allowed to remain too long on the trees the flavour is deteriorated. Autumnal Raspberries promise well, and will prove exceedingly useful if the weather should be at all favourable. This crop is not so general as it deserves. All that is required is an open situation, the soil well enriched; and as soon as the fruiting season is over the canes should all be cut down close to the surface of the soil, carefully selecting the young canes in spring, cutting away all those that are weak.

#### FRUIT HOUSES.

**Melons.**—The latest plants will be showing both staminate and pistillate flowers. The first fruits may remain if the object be to get the crop quickly off, or they may be removed and the fruit on the second laterals waited for, provided the requisite degree of heat is at command. The latter course is advisable where space is not an object and a full crop is desired. Do not earth up the roots till after the fruits are set and swelling. Fire heat will be necessary to maintain a temperature of 70° to 75°, rising with sun heat to 80° or 85°. Be sparing with water, employing the syringe only on bright warm days, and then in the early part of the afternoon. Considerable attention will now be necessary to plants just swelling their fruits in guarding against canker and preventing the cracking of the fruits. Fresh slacked lime applied on the first appearance of canker will subdue it. A lessened supply of water both at the roots and in the atmosphere is the proper remedy for cracked fruits, or cutting the shoot half way through a few joints below the fruit in the case of very vigorous plants. Wet the foliage of plants growing in pits and frames as little as possible, and water only at the roots to prevent flagging. Renew or renovate the linings to finish off the crop directly the heat is found to be on the wane, and employ a covering on cold nights.

**Pines.**—When exterior conditions are favourable ventilate freely all Pine structures containing young growing stock, also those in which the plants are expected to provide the spring and early summer supply of fruit next year. In order to maintain the sturdy habit and healthful appearance which plants assume at this period it will be necessary in conjunction with free ventilation to maintain the heat at the roots steady at about 80°, watering whenever the plants require it, employing weak liquid manure, and instead of sprinkling overhead merely sprinkling the pathways, &c., morning and evening. Except to prevent the temperature falling below 60° no fire heat is necessary. Plants lately potted may be allowed 10° to 15° more heat at the roots in order to stimulate them to penetrate the fresh material. Suckers recently started should as soon as well rooted be raised near to the glass, bringing them on very gradually. Fruiting plants should have a night temperature of 70°, and 80° to 90° during the day, closing at 85°.

**Cucumbers.**—Keep young plants near the glass to ensure a sturdy growth, and pinch out the growing point at the second leaf if the plants are to be trained with more than one stem. It is important that the shoots on the stem in either case be rubbed off until the plants have a clear stem to the trellis, when they may be allowed to make side shoots for bearing. Continue the preparation of fermenting material where that is employed for bottom heat; manure will require to be turned every three or four days, while tan will only require turning once, and that as soon as it is fairly warmed through. In forming the beds whatever material is em-

ployed tread it well down. Use the syringe sparingly, giving a light syringing only in the early part of the afternoon on bright days, but moderate moisture must be secured by sprinkling in the morning every available surface, and damping down before night-fall. The temperature should be maintained at 70° to 75° by artificial means, falling 5° through the night, and allowing an advance to 80°, 85°, or 90° from sun heat, closing at 80°. In pits and frames the temperature must be maintained by renovating the linings as necessary, and employ night coverings to prevent too great diminution of temperature during the night. Water very carefully, and sprinkle overhead only on bright days. Keep the foliage thin, frequently removing bad leaves and exhausted growths, and husband the sun heat as much as possible by early closing.

#### PLANT HOUSES.

**Greenhouse.**—Cyclamens should have every encouragement to make free growth by an intermediate temperature—viz., 55° to 65°, keeping the plants near to the glass, and supplying them with liquid manure. Seedlings established in small pots should be shifted as they fill the pots with roots, or plants as yet in the seed pan should be potted off singly in 8-inch pots as soon as they can be handled. Employ good loam with about a sixth of sand, placing the plants near the glass in a pit or other structure warmer than an ordinary greenhouse. Chrysanthemums should have their final staking and tying. The ordinary upright bush fashion is the best for general purposes, using as many stakes as will be necessary to keep the plants in form. Where good blooms are wanted all the small lateral side branches should be removed from the principal shoots, retaining the latter in numbers proportionate to the size of flowers required. Three to five shoots with the flowers thinned to one to each shoot will afford good blooms, or for very large blooms one shoot and bloom only should be retained; even the small varieties should be thinned, the blooms in consequence being finer. Afford plenty of liquid manure but not too strong, and syringe overhead every afternoon if the weather be bright. The principal stock of bulbs should be potted if not already done. The pots should be plunged in ashes under a wall where protection can be afforded from frost and heavy rain.

Azaleas that flowered early will have completed their growth long since. If they have been outdoors they must at once be placed under glass in a light airy position in a cool house, from which they may be removed into the forcing house from a month to six weeks before they are required to flower. Varieties suitable for forcing to produce flowers for cutting and for conservatory decoration are A. Borsig, double white and sweet scented; Narcissiflora, double white, sweet scented; the old alba, still one of the best for this purpose; Fielder's White; Raphael, double white, sweet scented; vittata elegans, white with red edge; amena and its variety Caldwelli, crimson; Jean Vervaeke, rosy pink tipped with white, promises to force well, and is one of the very best Indian Azaleas. Plants subjected to forcing do not require much training or tying, but later plants should at once be tied into the required shape. The plants if placed outdoors must be housed before they become saturated by rain. Camellias that have been placed outdoors after their buds were set should be taken in before there is danger from frost or drenching rain, either of which will cause the buds to drop. If the plants are infested with scale they should have a thorough cleaning, sponging the leaves on both sides, which adds considerably to the appearance of the plants. Any plants that have acquired an early-flowering habit and have the buds well advanced may be brought into flower with a temperature of 50°. Plants that have not the buds so forward as desired for the required time of flowering may be placed in a house which is kept slightly warmer than an ordinary greenhouse, with a little moisture in the atmosphere, but there must be no attempt at forcing, or the flowers will probably fall before they open. All hardwooded plants must be at once placed in their winter quarters. The lighter positions should be given to such as have the softest leaves and make growth in the winter, as Boronias, Gompholobiums, Phænocomas, Tremandras, Pimeleas, Leschenaultias, the latter having the warmest position, as the temperature for them should not often fall below 45°, but 40° is sufficient for the general stock. The whole of this class of plants should be kept near the glass, and do not crowd them. Where no separate house or houses exist for wintering Heaths they should be placed at the coolest end of the greenhouse. If Cytisuses well advanced for flowering be placed in gentle heat, 50° being ample, they come into flower quickly and will be very useful, and the flowering of Epacris may be accelerated in the same way. Rogiera gratissima gives terminal and axillary trusses of white sweet-scented flowers at this season, expanding more freely in gentle warmth than in a greenhouse; it is deserving of extended culture.

#### TRADE CATALOGUES RECEIVED.

Dick Radclyffe & Co., High Holborn.—*Catalogue of Bulbs.*  
The New Plant and Bulb Company, Lion Walk, Colchester.—*Catalogue of Lilies, Orchids, and Dutch Bulbs.*  
R. H. Vertegans, Edgbaston.—*Catalogue of Bulbs.*

Grayson & Co., Bury St. Edmunds.—*Autumn Catalogue of Bulbs.*

Samuel Yates, Old Millgate, Manchester.—*Illustrated Catalogue of Bulbs.*

S. Dixon & Co., 34, Moorgate Street, London.—*Catalogue of Dutch and other Bulbs.*

### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

BOOKS (*J. Mitchell*).—The "Garden Manual," post free 1s. 8d., contains information relative to the culture of the fruits you name, also of vegetables and florist's flowers.

KIBBITING FERNS (*H. M. F.*).—*Pteris tremula*, being a native of New Holland, is not eligible for being placed in competition in a class for British Ferns.

AGRICULTURE versus HORTICULTURE (*J. Morgan, jun.*).—By employing the land (attached to your house as a garden) strictly for growing flowers, fruit, and vegetables, you would not be engaged in agriculture but horticulture. As to obtaining possession of the land, you had better consult a solicitor.

LAPAGERIA UNHEALTHY (*H. L. F.*).—If there are worms in the tub they may be brought to the surface by well watering the soil with clear lime water; but the chief cause of the foliage turning yellow is, we apprehend, a deficiency of support. A plant so large can scarcely derive sufficient nourishment from the soil in a tub unless the tub is of an unusually large size. The plant should be planted out, but as that would be difficult, perhaps, on account of the great mass of growth affixed to the roof, you might tilt the tub and remove a portion of the bottom so that the roots might pass into the ground below, which should be made good by the addition of turfy loam, peat, and charcoal. If you can do this your plant will regain vigour, but if that plan is not practicable you must then remove as much of the soil from the tub as you can without materially disturbing the roots, and replace with fresh compost, to be top-dressed with decayed cow dung or other well-decomposed manure. Applications of weak and perfectly clear soot water would be beneficial. As you say the tub is well drained, a plant so large can scarcely have too much water during the growing season.

TRITELIA UNIFLORA (*A. James*).—This plant is not only quite hardy when planted on rockwork as you have been informed, but succeeds well on the level. If planted thickly in lines or beds it produces a very pretty effect early in the season. By all means plant bulbs of it in your rockery, placing not less than a dozen in each patch, and cover them about 9 inches deep with light sandy soil. You may plant them now, or as soon as you can obtain them.

SUCCULANT PLANTS FOR SPRING BEDDING (*A. Lady*).—*Echeverias* are greenhouse plants and would be injured if not destroyed by exposure to the frosts and wet of winter and spring. Some of the *Sempervivums* are hardy, such as *S. arachnoides*, *S. flagelliforme*, *S. globiferum*, *S. hirtum*, *S. montanum*, *S. pumilum*, and *S. tectorum*, but these require dry positions and well-drained soil. The last named is one of the hardiest and most useful for spring bedding. Sedums are hardy, and some of them are very useful for forming dwarf lines, or a close groundwork for beds in spring and summer. A few of the most useful are *S. acre* and its varieties *elegans* and *aureum*, *S. anglicum*, *S. lydium*, and *S. glaucum*.

CYCLAMENS AND SPRING-FLOWERING PLANTS (*Idem*).—The Cyclamen plants will do very well in the pit you name provided you water them carefully and maintain a night temperature of about 50°. It is impossible for us to say in what condition the corms will be that you expect from the Continent, but they will require great care in watering after they are potted, and even then you must not be surprised if you lose some of them. You would succeed much better by obtaining plants in a growing state from an English nursery, or you may raise plants from seed which all English seedmen of repute supply. The varieties of *Cyclamen persicum* grown in this country are not surpassed if equalled by any grown on the Continent. The Primulas should be placed at the coolest end of the pit, and the Cinerarias cannot be kept too cold provided they are safe from frost. They succeed much better when standing on a base of moist ashes than on a stage. Not knowing the size and condition of the plants we cannot tell you when they will flower. Cyclamens and Primulas may be had in flower from January onwards, according to conveniences for growing them, Cinerarias following in March and April.

SHRUBS AND TREES FOR A GARDEN IN DORSETSHIRE (*L. F.*).—1, *Shrubs for a Post Border*.—Let *Rhododendrons* predominate, taking care to secure a fair proportion of early and late-flowering sorts. Of early, select *altissimum*, *A. coccineum*, White Gem, *Nobleanum* with its varieties, *caneosum*, *C. album*, *C. pictum*, *Broughtonianum*, *Wellianum*, *Vernum*, *ignescens*, *coriaceum*, and *Blanche Superbe*. Of late, Mrs. John Clutton, John Waterer, Mrs. Holford, *macranthum*, maximum and its varieties *album* and *purpureum*, *Alarm*, *Grand Arab*, *Barclayanum*, *grandifolium*, Lady Dorothy Nevill, *Comet*, *Decorator*, *Hogarth*, *Frederick Waterer*, *Fleur de Marie*, *Duc de Brabant*, *Purity*, *Jenny Lind*, *Old Port*, Mrs. William Bovill, *Lady Lopes*, Lord John Russell, *Minnie*, *Ne Plus Ultra*, *Princess of Wales*, *Star of Ascot*, and *William Downing*. *Asaleas* you can have in many charming varieties, among which *pontica alba* should always have a place with such Ghent varieties as *Géant des Batailles*, *Lincote*, *Julius Cesar*, *Leopold I.*, *Elector*, *delicata nova*, *Admiral de Ruyter*, *Fanny*, *Impératrice*, *miniata floribunda*, *versicolor*, *Splendens*, *Rubens*, *Oscar I.*, *Morzeri*, *Unique*, the evergreen *Asalea amona*, and some of the best varieties of *Asalea mollis*. Then there are *Andromeda Catesbeii*, *A. floribunda*, *A. formosa*, *Kalmia latifolia*, *K. glauca*, *K. rubra*, *K. angustifolia*, *Ledum latifolium*, *Pernettya angustifolia*, *Menziesia polifolia*, and *M. alba*, and all the varieties of *Erica* (hardy Heaths), if you have space. The best are *medietas*, *Alportii*, *arbores*, the Cornish Heath *Erica vagans*, *vagans alba*, *carmea*, so beautiful in early spring, *codonodes*, *ciliaris*, and the varieties of *cineria* and *vulgaris*. Carefully arranged masses of these are always attractive, some of them flowering every month, from *E. codonodes* in January

to *E. herbacea* in December. *Skimmia japonica* also thrives best in peat, its bright crimson berries render it very ornamental, also *Daphne Cneorum*. 2, *Flowering Shrubs for Ordinary Soil*.—*Evergreens*.—*Escallonia macrantha*, *Berberis Darwinii*, *B. stenophylla*, *B. dulcis*, *B. japonica*, *B. Hookeri*, *B. Wallichiana*, *Mahonia aquifolia*, *Desfontainia spinosa*, *Daphne japonica*, *Ligustrum japonicum*, *Escallonia pterocladon*, *E. illinita*, *Viburnum Tinus*, *V. T. lucidum*, *Spartium junceum*, *S. multiflorum*, *Veronica decussata*, *V. salicifolia*, *V. Andersoni*, *Ulex europaea flore-pleno*. *Deciduous*.—*Deutzia crenata flore-pleno*, *D. gracilis*, *Hibiscus syriacus* in variety, *Hydrangeas paniculata grandiflora*, and *H. hortensis*, *Kerria japonica variegata*, *Pæonia* in variety, *Philadelphus grandiflorus*, *Leycesteria formosa*, *Lonicera odoratissima*, *Sambucus nigra aurea*, *Rhus Cotinus*, *Syringa grandiflora*, *S. Josikaea*, *S. vulgaris*, *Spiræa Thunbergii*, *S. arifolia*, *S. Douglasii*, *S. Lindleyana*, *S. callosa*, *S. Nobleana*, *Ribes sanguineum*, *R. sanguineum album*, *R. sanguineum aureum*, *Rubus fruticosus flore-albo-pleno*, *R. roseo-pleno*, *Weigela rosea*, *W. Desboisii*, *W. variegata*, *W. Van Houttei*. 3, *Flowering Trees*.—*Deciduous*.—*Tilia europæa*, *T. microphylla*, *Robinia Pseud-Acacia*, *R. hispida*, *R. hispida macrophylla*, *R. hispida rosea*, *Pyrus aucuparia* (Mountain Ash), *Liriodendron tulipifera* (Tulip Tree), *Pyrus prunifolia* (Siberian Crab), *Pyrus Aria* (White Beam), *Crataegus Crus-galli*, *C. coccinea plena*, *C. punctata*, *C. roses*, *C. coccinea*, *C. oxyacantha*, *Cerasus avium multiplex*, *Cercis siliquastrum*, *Catalpa Kempteri*, *Amygdalus persica*, *Amelanchier Botryaptum*, *Pavia rubra*, *P. macrostachya*, and *Laburnum*. *Evergreen*.—*Magnolia grandiflora*, *Laurus nobilis*, and *Cerasus lusitanica*. 4, *Trees with Handsome Autumnal Foliage*.—*Acer rubrum*, *A. polymorphum atropurpureum*, *A. Negundo variegatum*, *Fagus purpurea* (Purple Beech), *Cerasus Padus*, *Betula alba*, *Liquidambar styraciflua*, *Quercus coccinea* (Scarlet Oak), *Ulmus montana variegata* (Variegated Elm), and *Æsculus Hippocastanum* (Horse Chestnut).

FRANCOA RAMOSA (*F. T., Dublin*).—The *Francoas* are very variable in the colour and form of their flowers, and by some authors the three known forms are regarded as simply varieties of the original *F. ramosa*, but others consider them as distinct species. *F. ramosa* has sessile pinnatifid leaves, a long raceme of white flowers, calyx four-parted, petals four, stamens eight, and stigma four-lobed. Probably your plant is one of the two following—*F. appendiculata*, large leaves, pinnate at the base, raceme of pale pink flowers densely crowded near the apex. This most resembles the one you describe. *F. sonchifolia*, looser raceme of larger and purplish flowers with a red line down the centre of each petal.

PRIMULAS AND CYCLAMENS (*J. B. jun.*).—The flowers sent, Williams's Prince Arthur, rosy crimson, semi-double; Suttons' Ruby King, ruby crimson, are very fine, the white is also good. They represent excellent varieties admirably grown.

DOUBLE LILIUM AURATUM (*T. B. DoBy*).—The flowers sent indicate the gradual transformation of stamens to petals that characterise double flowers. Four of the normal six stamens are partially converted into petals, but in a very irregular and deformed manner. Possibly the seed of this plant might give rise to plants bearing flowers approaching still closer to the true double form. Try the experiment.

PICRA PINNAPO UNHEALTHY (*J. Byron*).—We do not advise you to prune the ends of the branches as a remedy for preventing the growths in the interior of the tree dying. The tree, if it is not suffering from stagnant soil, does not derive the support that it needs. If you can remove a portion of the surface soil for a considerable distance round the stem (further, indeed, than the branches extend), and replace with fresh soil and decayed vegetable refuse, and surface this with manure, the specimen will probably regain its lost vigour and again become ornamental.

FUNGUS ON ROSES (*E. W.*).—Your Roses appear to be attacked by the orange fungus, to destroy which dissolve 2 ozs. of blue vitriol in hot water, and then add two or three gallons of cold water, and with this sponge the foliage or syringe the trees. As the fungus, however, is principally on the under sides of the leaves, syringing is not effectual unless special care is taken to apply the solution to the parts affected. Three or four ounces of soft soap dissolved in a gallon of water and similarly applied will also check the spread of the fungus. Enrich the soil if needed by applications of farm-yard dung or liquid manure to promote a stronger growth of the Roses.

STOVE FOR GREENHOUSE (*C. C. K.*).—We do not know to what stove you refer. One apparatus which we noticed was, as we subsequently announced, withdrawn from sale. We do not know of a stove that would satisfactorily heat a conservatory 36 feet long by 16 wide; but as the one you have "answers well so long as it is attended to," cannot you obtain a larger stove of the same kind that would "keep in all night"? If anyone who has had experience of a stove that has been found to answer requirements similar to yours, we will readily publish particulars of it if communicated.

PEARS CRACKING (*A. B. C.*).—As the fruit on the two trees "always crack," you had better carry out your proposition of destroying the trees and planting others. *Beurré d'Amanlis* and *Loise Bonne* of Jersey are two free-growing, good, and hardy varieties. They succeed well on the Quince stock, and are suitable either for growing as pyramids or espaliers. The variety you have is, we think, *Souvenir du Congrès*, a seedling from Williams Bon Chrétien.

ERICAS AND EPACRIES (*Idem*).—For flowering in the late autumn months, such species of *Ericas* as *hyemalis*, *gracilis*, *cafra*, and *colorans* are among the most useful for decorative purposes. *E. exulans*, *E. pellucida*, *E. decora*, and *E. discolor* also flower late in the year. A few good early-flowering *Epacries* are *Vesta*, *Viscountess Hill*, *Lady Panmure*, *The Bride*, *Alba odorata*, and *hyacinthiflora rosea*. Good later-flowering sorts are *Walkerii*, *rubella*, *fulgens*, *Fairburniana*, *hyacinthiflora candidissima*, and *courseana*. These, however, will not flower before Christmas. Primulas, *Cytisuses*, dwarf *Chrysanthemums*, perpetual *Carnations*, and *Solanums* are attractive before Christmas, and at the same time are comparatively hardy. By potting bulbs at once of Roman *Hyacinths* and early Paper White *Narcisuses* they will flower late in the year.

GRAPES SHANKING (*R. H.*).—Various theories have been submitted on shanking, but it is doubtful if the subject is yet fully understood. Shanking is an ulceration or gangrene attacking the footstalks of the bunches, and appears to be occasioned, like shrivelling, by the temperature of the soil being too much below that in which the branches are vegetating, and consequently the supply of sap to the Grapes is much diminished, and the parts which thus fail to support immediately begin to decay. This is an effect always the consequence of a diminished supply of sap, apparent either in the leaves, flower, or fruit. The coldness of the soil causes this torpidity in the action of the root, and this, perhaps, at the very period when the greatest



demand is made upon it to sustain the excessive perspiration which is going on in the leaf, and to furnish fresh matter for elaboration, to both which ends it is frequently quite inadequate owing to drenching rains. If the young fibre be examined at such inclement periods it will be found somewhat discoloured, and in some cases quite rotten. Shanking, we conceive, is generally caused by the unnatural disagreement of temperature between the root and top, independent in the main of the question of moisture. It generally occurs with Vines which have been somewhat forced; seldom on open walls, seldom with Vines forced in pots or tubs. Vines that produce a mass of healthy fibrous roots near the surface and are in other respects well managed, and if a congenial relative temperature to the roots and foliage is maintained, are rarely disfigured by shanked berries. Vine borders are often made too rich, light, and large at the first, and a few long and strong succulent roots are produced instead of a multiplicity of fibres, as is the case when borders are made firmer and are increased in size yearly as the roots require more space and the Vines more food.

**HELIOTROPES FROM SEED (A. S.).**—Seedlings usually grow much more strongly than cuttings, but your plants appear to be exceptionally luxuriant, the leaf sent being 7 inches in length and upwards of 3½ inches in diameter. Had the plants been grown in small pots and placed in a very sunny position in the open air they would probably have flowered. We should strike cuttings of them at once, winter them on a shelf in a rather warm greenhouse, and pot them off in spring, keeping them in small pots until they show their flowers; then place them in larger pots or plant them out. You can also keep the old plants if you prefer, but you could probably occupy their space more profitably, but do not destroy them until the cuttings are rooted. If the weather continues fine your Grapes will ripen, but if dull days ensue employ more fire heat. The practical lesson you have had in thinning-out the berries will be of more value to you than a page of instructions. No precise rules can be laid down for thinning Grapes, as so much depends on the varieties grown and the condition of the Vines.

**PIPING FOR HOUSE (C. Ee).**—We always advocate a liberal quantity of piping, as the requisite temperature can then be maintained without overheating the pipes, which means an undue expenditure for fuel, and a temperature not congenial to vegetation. One hundred feet of 4-inch pipes would enable you to maintain a temperature in the house of 45° to 40° during the severe weather of an ordinary winter, and would keep out frost if the external temperature was only a few degrees above zero. The most expensive mode in the end of heating houses is unduly restricting the quantity of piping.

**ROSES AND LILiums (Mrs. H.).**—Nearly all the Liliums will grow well in partial shade provided the soil is good and well drained, and at the same time is not dry in summer. You cannot do better than select such of the inexpensive varieties that are offered by nurserymen. Roses do not grow well under trees. You may order what number you require of the strong-growing Hybrid Perpetuals and try them, or state your wants to a nurseryman and he will send those best suited for your purpose. You do not state the number you require, so that we cannot give a list of either Lilies or Roses. Some of the Lavatera are annuals, some biennials, and other perennials, and we cannot tell to which section yours belong without seeing a flowering specimen.

**CLIMBERS FOR NORTH-EAST ASPECT (Berkshire).**—The Virginian Creeper will thrive admirably and will cover the wall quickly, but it is deciduous, as also is the ornamental *Ampelopsis Vetchii*; both are quick growers. Such Roses as *Gloire de Dijon*, *Amadis*, *Bennett's Seedling*, *Dundee Rambler*, and *Felicité Perpetue* would all grow freely in good soil and cover space quickly, as also would such *Lonicera* (Honeysuckles) as *flexuosa*, *brachypoda*, *pubescens*, and *sempervirens*. Clematises such as *montana* and *flammula*, as well as the fine hybrids *Jackmani*, *Prince of Wales*, *Star of India*, *Rubella*, *Lady Bovill*, *Miss Bateman*, and several others, would grow and flower well. Some of the Ivies are also ornamental, and the bright yellow *Jasminum nudiflorum* succeeds well on a north aspect.

**VIOLAS FOR BEDDING (F. J.).**—The following are some of the most profuse and persistent bloomers:—*Bluish Purple*—Alpha, Queen Victoria, Tory, and Blue Bell, very free. *Purplish Violet*—Beauty of Clyde, Cornuta Perfection, Lady Diana, Admiration, and Waverley. *Yellow*—Dickson's Golden Gem, Lutea grandiflora, Sovereign, and Yellow Boy. *White*—Pillig Park, Pearl, Purity, and Nonpareil.

**GATHERING PEARS (E. Davenport).**—Such fruit as you have sent is not by any means ready for gathering. It should remain on the tree until the kernels assume a chestnut colour, or until the fruit when raised by the hand separates readily from the tree without breaking the stalk. Pears cannot be named in a hard green state. The plant is *Euphorbia Lathyris*, the Caper Spurge.

**FRAMES FOR FLORISTS' FLOWERS (J. G. S. Leves).**—Brick pits about 6 feet wide, 1 foot high in front, and 2 feet high at the back, are valuable adjuncts to any garden, not only for preserving comparatively hardy plants in the winter, but for growing more tender plants in, also such crops as Cucumbers in the summer. Such plants as Carnations, Pansies, Phloxes, Chrysanthemums, and various others, including Auriculas, may be safely wintered in such pits, the plants, except those last named, being grown in the open air during the summer. We should not have any concrete bottoms, but should have the foundations of the brickwork 18 inches or more below the ground level and fill in with rubble to the requisite height, surfacing it with coal ashes. The water would then pass away freely, and the pots could, if necessary, be partially plunged in the ashes, and thus their roots would be protected. In the summer the pits could be deepened so as to accommodate taller plants or crops. The pits should face the south. For Auriculas moveable frames should also be provided, as a southern aspect except in winter is unsuitable for these plants. In the summer Auriculas require a very cool position, such as the north side of a building, while in the spring an easterly or southerly aspect is preferable, except when the flowers commence expanding, when the plants must be placed in a shaded position. The plants except in summer are best placed on stages of wood, which can be readily formed in the frames, and the plants should be close to the glass. We should thus have both pits and frames, having ashes in the former, placing a few boards on the ashes if any plants required a dry base at any time, and wood shelves in the frames for the Auriculas. We do not know of any special mode of obtaining plants. Private growers frequently exchange plants, but do not usually sell them below their current value.

**POTTING SHED (An Irish Subscriber).**—We readily answer all questions on gardening subjects that are submitted to us in an intelligible form. Your question as put now is totally different from that of last week. Estimates

of cost we do not give, and it appears by your question now before us that you do not desire us to do so, but simply wish to know "what a gardener would require in a lean-to shed, say 20 by 10 feet, and whether it would be more suitable to glaze the roof like a greenhouse, or slate it?" This question is answerable, the other was not. A glass roof is not necessary for a shed of the width named even if it faces the north; ample windows in the front wall will admit all the light that is required. The potting bench, about 3 feet wide, should be placed near a window, and should be made of 2½ inch planks planed smoothly on the upper side; benches made of thin boards are always unsatisfactory. A shelf next the wall over the bench is very useful for labels, nails, and shreds, paint, strings, whetstones, pegs, and other small articles in constant request. In the back wall stout pegs should be fixed at proper heights for various tools used in the garden, and others should be placed in a convenient position for water pots, baskets, &c. Three or four bins should be formed on the floor, the one for loam being much the largest. This provision for soil is very important. If the height of the shed permits a few strong beams should be placed across from wall to wall to support boards for forming a loft, which would be valuable for mats, nets, brooms, stakes, &c.; and nails should be driven into the rafters on which could be hung Onions, herbs, and other products and articles. Drawers and boxes for roots and seeds are necessary, their size and number depending on circumstances. Further, means should be adopted to render the shed frostproof during severe weather; a row of hot-water pipes, a fireplace or portable stove will answer. Various roots can then be preserved, plants can be potted, and much other work done during inclement weather. By adopting the mode of arrangement suggested, subject to such modifications that you deem necessary, you will have a shed of great usefulness. The floor may be of bricks, stone slabs, or asphalt.

**SOWING GLORIOSA SUPERBA (D. Wilson).**—Sow the seed early next March in a compost of equal parts peat, loam, leaf soil, old cow dung, or well-decayed manure, and sand, covering the seeds about a quarter of an inch deep, and place the pots in a hotbed of not less than 75° nor more than 90°. Keep the soil moist, but not wet, and when the seedlings are up let them have abundance of light; keep the young plants near the glass, but still in bottom heat. They must be kept moist at the roots, and have a moist atmosphere, a temperature of 65° to 70° at night, 75° to 85° by day, or 90° with sun and air. When the seedlings can be well handled pot them off singly in 3-inch pots, and return them to the hotbed, shading for a few days until they have recovered from the potting, then admit air, and expose to light. When the pots are filled with roots shift the plants into 5-inch pots, which will be sufficiently large the first season, keeping them in the hotbed structure you can command, with a moist atmosphere, up to September, when the moisture should be diminished, and the plants dried off before winter, and kept dry until March. Then shake away all the soil and repose, covering the bulb about an inch or so with soil. Place the plants in a hotbed, and do not give any water until the bud appears above the soil. Encourage growth with strong heat and moisture, training as it proceeds. The plant will succeed in the greenhouse after it has advanced to the flowering state. When the leaves are turning yellow cease watering, and when the flowers are completely decayed place the pots where they will be dry until the following March.

**NAMES OF FRUITS (A. Z.).**—The Apple is Cellini, the Pear we think *Beurré de Caplaumont*. Fruit should be ripe when sent for identification.

**NAMES OF PLANTS (S. E. W.).**—*Achillea Ptarmica* *flore-plena*. (A. C.)—1, *Cupressus sempervirens* (Upright Cypress); 2, *Thuja Variegata*; 3, *T. orientalis*, or Chinese Arbor-Vitæ; 4, *Stachys lanata*; 5, *Clethra alnifolia*; 6, *Myrica cerifera*. (Clifton).—*Cineraria scanthifolia*. (Hornchurch).—The specimen resembles *Impatiens Noli-me-tangere*. (W. C.)—*Cimicifuga Serpentina*. (L. B.).—1, *Cnicus arvensis* (Creeping Plume Thistle); 2, *Cnicus palustris*, or Marsh Plume Thistle; 3, *Polygonum aviculare*; 4, *Bartia odorata* (Red Bartia); 5, *Hieracium sabaudum* (Shrubby Hawkweed); 6, *Crepis biennis* (Rough Hawkweed); 7, *Lappula communis* (Common Nipplewort). (Rosa).—The smallest flower is probably *Neottia nivalis*, but in the absence of root and leaf it is scarcely recognisable. The other is probably *Dendrobium chrysanthum*, but the specimen is very imperfect. (S. Turnbull).—1, Specimen insufficient; 2, *Fraxinea ramosa*; 3, *Pilea muscosa*. (Striving).—1 appears to be an *Ixia*, but the specimen was not sufficient for identification; 2 resembles a *Veltheimia*, but we cannot undertake to name plants from a single small flower alone. (J. P.).—1, *Calamintha officinalis*; 2, *Santolina incana*; 3, *Sedum carneum*; 4 resembles *Malva moschata* alba; 5, *Silene perfoliata*.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### CULTIVATION AND USAGE OF GORSE OR FURZE.

GORSE or furze is found in almost every district of the United Kingdom, and although it commonly grows in its wild and uncultivated state upon the poorest and most barren lands, yet it has been in use as food for horses and cattle from time immemorial. In Wales—according to the most reliable evidence obtained from the farmers of the counties of Carnarvon, Anglesey, and Denbigh—it has been used principally for the feeding of horses, either by itself or in conjunction with other provender, and in seasons when the hay has been damaged it has proved a most valuable substitute for it. At the same time, and particularly upon farms where no roots are cultivated, gorse is the best provender for milch cows in the winter months, and the results of its usage have been most satisfactory. It gives to the milk and butter a fine cowslip colour and a rich flavour. Those who have applied it to this purpose hold the opinion that cows yield

more profit than when fed with the best hay, or even with roots, such as Swedes, turnips, or mangolds. The practice of feeding sheep with gorse has hitherto been somewhat limited. This has chiefly arisen from the attention of the small or peasant farmers not having been directed to the keeping of sheep stock. In those cases, however, when the experiment has been made in conjunction with turnips, hay, &c., sheep have been found to eat it freely, and improve in condition rapidly. It is in feeding horses, however, that gorse has been most generally and usefully employed, particularly by the small farmers—not only in Wales, but Ireland, Scotland, and also in France and Belgium. In ordinary seasons the grass and other produce of many of the small farms as they have been cultivated would barely suffice for the horse or horses employed upon them.

The cultivation and careful management of this plant, common as it is, deserves the greatest attention, and presents to all classes of farmers advantages, some of which we propose to enumerate. It grows luxuriantly on the thinnest, the coldest, and apparently the most sterile soils. It may be cut as circumstances require—at one year's growth as well as at two. With moderate care in its culture, and by keeping it protected from the bite of sheep, cattle, &c., it will produce in one year's growth from 8 to 10 tons per acre of good succulent food; but in case it is cut every second year it will yield at the rate of from 12 to 15 tons per acre. The gorse, however, at two years' growth is a very different article from that of one year's growth, because a portion will have become hard and wiry, and in proportion as the woody fibre has been established so the nutritious portion of the plant has been used in forming it, and its value as food lessened in proportion. Although we have found that gorse will grow under the greatest disadvantages as regards soil and aspect, still it will grow more luxuriantly and produce much heavier crops, even on the poorest land, in a warm aspect and mild climate. Many poor sands, gravels, or chalk hills now furnishing but scanty food in pasture for sheep or other stock would, under gorse cultivation, yield abundant crops of great value compared with the little herbage produced under ordinary circumstances.

We must now refer to the cultivation of gorse so as to insure as nearly as possible a regular plant. There are two or more varieties of gorse. The small brown variety, commonly seen on heaths and moors, is of little use. It is to the French variety that we look for the production of full crops, and somewhat large quantities of seed are annually imported from France and Belgium, and it is now selling at 1s. 6d. per pound. The best time to sow the seed is in March or April, and when sown broadcast amongst corn, as is often done, 16 or 18 lbs. of seed will be required per acre; if drilled 18 or 14 lbs. will be sufficient. This mode of culture is similar to sowing clover with Lent corn, which always suffers if the corn is bulky and laid, and gorse will suffer precisely in the same way. There is, however, another plan of sowing similar to the cultivation of lucerne, in which case it is drilled at intervals of 15 inches between the rows for the purpose of hand-hoeing, or at intervals of 18 to 22 inches for the advantage of interculture by horse-hoeing whilst the plants are young, for they are sure to suffer nearly as much as young turnip or mangold plants if overrun with weeds or couch grass. There is also another mode of obtaining a good plant of gorse, and, although it may be more expensive, it is probably the surest way of obtaining early maturity. It is by sowing a patch of garden ground in the month of March and setting out the plants in clean and well-cultivated ground in the month of September, similarly to the planting of cabbages. The plants may be set at about 12 inches apart in the lines, and 18 inches between the lines. This plan will yield a crop fit for cutting as cattle food in November of the following year, but during the summer the land should be kept free from couch and weeds. Each of these modes of sowing has advocates, but it is found that in the broadcast, or even in the drilling system, the seed does not usually vegetate regularly, probably from the circumstance of some of the seed being new and some several years old. This will undoubtedly cause the seed to start at different periods, the newest seed always

being the first in growing; we therefore commend the system of planting as being the safest plan of obtaining and retaining a regular plant of gorse. The mode of cutting the crop yearly is very cheap and simple. Every cutting should be done with the scythe, and by cutting close to the ground there will be no old hard stems to contend with. If, however, the crop is only taken at two years' growth the cutting is more difficult. On many soils the plant is indigenous, and in case we have any rough land hitherto overgrown with strong gorse this land, after grubbing-up the old stumps, will be sure to become thickly planted with young gorse the first year after grubbing, and may thus be converted into a field for the growth of food for horses, cattle, &c.

One of the reasons why gorse has not attracted more attention as food for stock is in consequence of the difficulty of reducing it into a state fit for food, by breaking down the prickles and points on the stems of the plants. The old-fashioned method of chopping the stems and beating with a mallet on a block was succeeded by a plan whereby the stems were passed through an ordinary chaff cutter, which if carefully done would be sufficient to induce horses to eat it; but not so the cattle. It was therefore necessary, when required to feed cattle or sheep, to crush it under heavy revolving stones on a platform by horse power. We have, however, now a machine for use by which even gorse of two years' growth may be manipulated if required. This machine is called a Gorse Masticator, and was exhibited at the late Show of the Royal Agricultural Society at Kilburn, where it received a special silver medal. This new machine is sold by McKenzie & Sons of Cork, and will reduce the most stubborn gorse to a pulp, so that any stock will eat it readily; but owing to the heating and forcing effect of this food it is usually given in conjunction with hay or straw chaff for horses, and with roots of some sort for cattle and sheep. We must now call the attention of the home farmer to the growth of gorse, for upon any poor portion of the farm or any hilly rough ground it may be turned to account, and especially where game is reared by the proprietor or occupier of the property, for in such a case the gorse field would be sure to attract game and furnish capital breeding ground, especially for partridges, as it lies quiet all the spring and summer down to the month of November, when the gorse is cut. If required for the protection of rabbits it may be cut in patches every two years, thus leaving intervals between the two growths for the purpose of facilitating the sport of shooting, and still the advantages and value of the gorse for feeding purposes may be maintained. Farm horses may be allowed daily about 40 lbs. mixed with a little hay chaff; cows may be allowed the same quantity, with about 10 lbs. of roots and straw chaff, bran, or oatshells mixed daily. This food should be prepared only as required for use, for it will ferment and turn sour if prepared beforehand. The clippings of gorse fences are sometimes used as cattle food, and the sloping banks often found in hilly districts as well as the banks of railway cuttings may be turned to account by the growth of gorse. Various instances can be adduced where a number of horses let for hire, and large dairies of a hundred and upwards of milch cows, have been maintained in capital condition during the winter months from November 1st to March, with prepared gorse in admixture with other food.

Analyses by various chemists have been taken, but that given by Mr. Lawes and Dr. Voelcker in comparison with other food is the most important. As follows—

Name of Food.	Flesh-formers.	Fat-formers.	Name of Food.	Flesh-formers.	Fat-formers.
Furze or Gorse.....	2.31	.. 9.34	Swedes.....	1.94	.. 5.93
Cabbage.....	1.63	.. 5.08	Carrots.....	0.60	.. 10.18
Kohl Rabi.....	2.76	.. 8.62	Common Turnips..	1.80	.. 4.43
Mangold.....	1.54	.. 8.60	Clover hay.....	4.37	.. 9.14

#### WORK ON THE HOME FARM.

*Horse Labour.*—Horses will be as yet employed in connection with the harvesting, carting, and stacking the crops of corn and pulse and also the second cuttings or late crops of hay. The next urgent work for the horses will be preparing the land for trifolium and also winter vetches; 80 lbs. of seed per acre for the former, and 2 bushels mixed with 1 bushel of winter oats for the latter, would be none too much seed under present circumstances and prospects. At the same time the autumn cultivation of all land intended for roots next year should be continued whether the harvest work has been concluded or not, and where the horse power on the home farm is insufficient for this steam power should be resorted to immediately. Every day of dry weather at this late period of the year is of the greatest consequence, and where steam power is not maintained upon the farm it should be hired. Several seasons past must have taught the home farmer lessons which he should not forget—that is, that where autumn tillage has been neglected clean fallows for roots could not be effected in the spring, especially for early sowing with mangolds and other roots. We have during the past week or two had abundant opportunities of seeing the result of a succession of bad seasons for fallowing the land on the mixed and strong soils; the fields in most instances are extremely foul with couch, watergrass, and the various weeds of the farm. This is more especially the case where autumn fallowing has been neglected, and where farmers have neglected to prepare the land for roots until the spring of the year, but is nowhere so

visible as upon farms cultivated under the four-course rotation. The reason of this is fully apparent when it is considered that the root land when the season is unfavourable cannot be cleaned as the fallow, in which case there is no other opportunity for eradicating the couch grass until the land is again under cultivation with roots, unless it is done by forking out the couch amongst the roots, or, as a last resort, instead of taking a second crop of clover a bastard fallow, as it is termed, is made after the hay crop has been taken and before sowing the land with wheat. Upon the generality of soils, however, this practice is often prejudicial to the wheat crop, for the late fallow makes the land too hollow, and when it settles down in the winter it oftentimes leaves the roots of the wheat plants comparatively bare; the crop then frequently has not sufficient root hold, and the wheat falls before harvest. This statement, based upon our own experience, should teach the home farmer that autumn cultivation of the fields intended for roots the next year should be done by fallowing or surface cleaning in the autumn, either by the horse power of the farm or, which is better, by steam power, because so much more of this work can be done in a given time.

**Hand Labour.**—Potatoes are now being taken up, but the early varieties, particularly the Early Rose, have suffered much from the disease when they have been allowed to remain in the land. The only exception we have seen is where the haulm was cut off as soon as it turned yellow, and in such cases the roots have proved sound. It is yet too early to dig the late varieties, because it is quite impossible to say what portion of the tubers would rot if stored before they are ripe. When the haulm is affected by disease it is best to let the potatoes remain in the ground until the month of October, in which case any tubers affected will have decayed, and the remainder will generally do well in store. Cattle intended for Christmas will not improve much in condition from this time on the pastures unless some grass has been especially reserved for them, and even in that case they should go into the house or yards at night time and receive some cake, cracked beans, or maize, &c., or be put into the boxes or stalls for winter quarters, as the nights are becoming chilly for the animals. The dairy cows, too, should have some assistance beside the grass, as the pastures are becoming stale and short of grass; and to enable them to continue to yield a full quantity of milk they should receive a little hay at night, or, what is better, green fodder in the racks at milking time if such has been provided, consisting of clover, late trifolium, or vetches and rape mixed; but in the absence of assistance of this kind the yield of milk will rapidly diminish. Weaned calves should now come into hovels at night time and receive some chaff with pulped roots, but steer calves intended for fattening early should be kept in entirely and fed upon early turnips, chaff, cake, and beans cracked; a small portion of inferior wheat crushed would answer now, the samples are so light, mixed with other food. This is the heavy working period for horses when they are just going off the feeding with clover, and it should be quite understood that it is a bad plan to change suddenly from green food to hay or all dry food of any sort. It is much better for the animals to get some roots with hay, chaff, &c., and an increased allowance of corn until the heavy work of the autumn months is finished. Colts will now be weaned, and when taken from the mares should be placed in well-fenced paddocks with a hovel attached for feeding them in. The best food they can have is white carrots cut with Gardener's cutter, and bean or maize meal mixed with the roots, and good park or meadow hay well saved *ad libitum*. Where the manure has been laid out for wheat either upon the fallows or lea ground it should be spread immediately, in order that it may be the more readily covered in when the land is ploughed, for if allowed to lie long in heaps it is sure to make the corn grow irregularly and injure the yield of grain.

### INDIA AS A WHEAT-PRODUCING COUNTRY.

A REPORT on Indian wheat by Dr. Forbes Watson has recently been published by command of Her Majesty and presented to both Houses of Parliament. This subject, which is one of great importance, has been treated in a most exhaustive manner, and the report may, and no doubt will be, read interestingly by the landed gentry, farmers and capitalists of the kingdom.

In accordance with a resolution of the Government of India upwards of a thousand samples of wheat were sent to the India Office for examination—by far the most complete collection of Indian wheats ever brought to this country. These samples were submitted to critical examination, and their relative values were assessed and compared with the current values of the produce of the chief exporting countries and with the current quotations of English wheat. Divided into five grades, it was found that of the best white wheats from India 101 samples were of superior quality—valued at 44s. to 48s. per quarter of 496 lbs., while only nine samples were inferior and of a value below 37s. per quarter—the average value 41s. 9d. Other classes were of proportionally lower value, yet it is worthy of notice that out of 827 samples 459 were above average value, while 368 were of ordinary or inferior quality, but only 114 decidedly inferior. By a comparison of value of the wheats of the great exporting countries the Indian

produce compares very favourably, only being a little lower than Danzig, Australian, and the best American grades, while it exceeded by 2s. per quarter the average price of English wheat, but in this case, as is explained, home-grown produce was of a low average character. After showing that India is well adapted by such aids and precautions as are suggested for the growth of wheat of the highest quality, and after adverting to the present low level of prices (which have only been reached twice within the last hundred years—viz., in 1835 and 1851), the conclusion arrived at is that India is well adapted for the growth of wheat of the finest quality, and may shortly become one of the chief sources of supply for the United Kingdom.

The relative quantities of wheat grown by different countries is thus estimated:—"The production of the United Kingdom amount to only about 10,000,000 to 13,000,000 quarters per annum. Austro-Hungary, Italy, and Spain each produce about the same quantity. Germany produces from 15,000,000 to 18,000,000 quarters, and the two countries which produce the largest amounts are France and Russia, each producing from 30,000,000, to 35,000,000 quarters per annum. Both are surpassed by the United States, which produced during each of the past two years upwards of 45,000,000 quarters. No complete statistics exist for India, but the yearly production of the provinces under direct British rule will amount to from 30,000,000 to 35,000,000 quarters, or to the same quantity as that produced by Russia or France. But if the native States in the Punjab, Rajpootana, Malwa, Bundelkund, and Guzerat be added, in all of which wheat is largely cultivated, it will be found that India must be considered as being, next to the United States, the largest wheat-producing country in the world." Much other information immediately affecting the interests both of this country and India is contained in the Report, which is highly worthy of perusal by all who are interested in the important subject on which it treats.

### LA FLÈCHE.

FASHION prevails far too much with poultry fanciers. It is true that certain old-fashioned breeds hold their own, as they ought and probably ever will do. Many kinds, however, are tried and discarded without any fair trial, some of them doubtless because they do not answer the particular requirements of the breeder; others because they have been unduly extolled, and being found not to come up to the character given them by some over-enthusiastic admirer are thought good for nothing; others simply because their owner is fond of novelty, and only bought them as something new and uncommon. Among breeds which we suspect have not had a fair trial are *La Flèche*. Some twelve or fourteen years have elapsed since French poultry came into vogue in England. Crèves had been known for some time before, but were only occasionally seen in the "Any variety" classes of poultry shows. Suddenly a regular furor for French poultry sprang up; it was much stimulated, if we remember rightly, by the sight of the splendid birds, most of them imported, then shown by the long-since-defunct National Poultry Company, and by Colonel Stuart Wortley. Classes were everywhere given for the three varieties, Crèves, Houdans, and *La Flèche*, and they took their place as recognised breeds. Handsome Crèves have held their own, though we learn that they, especially the former, have not been improved in utility by the very arbitrary standards of beauty which have been made for them.

*La Flèche* have almost entirely disappeared from English shows, a few sometimes compete with Crèves, and a few are found in "Any variety" classes, but anything like a good collection of the breed could not, we believe, be made in the three kingdoms. Why is this? We have inquired much and can get no satisfactory answer. We are told that they do not thrive in the English climate. This may be so, but we have great doubt about the truth of the assertion; there is much vagueness in it, too, for the climates of Yorkshire and of Devonshire are very dissimilar, and birds which do not thrive in one very probably might in the other. Certainly *La Flèche* are not beautiful, and probably they are susceptible of cold, and for these reasons we fancy no one has taken much pains with them. They are noble birds, however, when well grown and in fine condition, and though their hornlike combs perhaps look somewhat Satanic, we cannot but admire their glossy black plumage.

As they are eminently a breed for use and not for fancy, we shall not give any minute particulars as to their exhibition points. *La Flèche* are a large breed, somewhat long on the leg, but still not deficient in breast; their plumage is tight and of a glossy black throughout; they have no comb in the ordinary sense of the term, but two fleshy horns; their legs are slate colour; their flesh is white and very juicy. The famous poulares of the Parisian markets are almost always of this breed. They are fair layers of large eggs, very like those of Spanish fowls, to which they are evidently related. There were immense and excellent classes of them at the Paris Exhibition, though few of the birds individually equalled the finest specimens we have seen at English shows. A few years ago very fine birds were exhibited by one or two Irish breeders, but the grandest specimens we have of late seen are

those belonging to Mr. De Faye of St. Helier's, Jersey. An old cock from this yard, which carried off the first prize and a cup at the last Jersey Show, was a truly magnificent bird, and though at least six years old he was in full and good plumage—a sign of great strength of constitution at that age. We have since inquired the weight of the bird, and soon after a long voyage to an English show, from which he suffered much, he weighed 11 lbs. 10 ozs., and the hen which went with him 10 lbs. 2 ozs. Their owner keeps all three French varieties, and therefore is an impartial judge of their merits. He wrote to us in April: "My La Flèche hens have laid all the winter, and I have not found an egg unfertile, and yet the winter has been one of the coldest and most severe we have had for years, and I consider the breed one of the best either for laying or eating; I find them more hardy and better able to stand the cold than the Houdans or Crève-Cœur. I keep the three breeds, and have given them fair trials. The reason why many are discouraged with La Flèche in beginning is simply owing to the way they feed their birds; I find by experience that they must have a good and generous diet at all times, but above all a good warm meal in the morning, and if confined a certain quantity of animal food."

Such being the opinion on the breed given by so good a judge, we should certainly advise those who live in a good climate in the southern or western counties to try La Flèche. Table poultry are terribly neglected in England, and any good addition to our breeds is a boon. When a variety has been let down as this has it generally gets into the hands of a few fanciers whose stocks are probably related; we should therefore recommend that a vigorous cock or two be procured from a good French yard from time to time. With a little care we feel sure that the breed might succeed well in the hands of a careful poultryman.—C.

#### RHEUMATISM IN CAGE BIRDS.

We have heard of many cage birds becoming weakened in their feet and claws besides those of a correspondent, "H. L. F.," whose birds are not affected with cramp or paralysis, or they would not, as is remarked, be otherwise in good health. There is scarce any wonder at birds being affected considering the damp and changeable weather experienced throughout the summer, especially when so much humour has prevailed and birds have had the use of the bath the same as when the air is dry and sultry. It is not easy to prescribe a remedy without knowing how the afflicted birds have been treated, but generally the first step to take is to remove them into other cages, separating the Canaries, Goldfinches, &c., from the foreign birds. For the first week bathe the feet of the birds in warm salt and water for two or three minutes each time, and before placing them in their cages tenderly rub the claws betwixt your thumb and finger with brandy and salt. At the expiration of the week anoint the claws with almond oil two or three times. Supply a free vegetable diet, such as water-cress, plantain seed, and lettuce, plenty of which may now be obtained. The foreign birds may in addition have ripe fruit and grass to eat. Mix with the Canary and white millet seed mustard seed, linseed, scalded, rape seed, and groats. When the birds are recovering the use of their claws they will be much benefited if permitted to fly about in a spare open room with branches and rudely constructed perches fixed therein. It is surprising to find how quickly the birds regain strength and pass through their moulting sickness when they have their liberty as suggested.

Perhaps a few remarks about perches will be of use. Birds in their free natural condition have the advantage of perches of various degrees of thickness and form. The chief consideration should be that birds should have perches such that they can well grasp, so that the muscles of their claws and legs are properly brought into play. The perches in an aviary should vary in construction, for those which will be suitable for the larger and stouter claws of many small foreign birds will not be so suitable for the smaller and more delicate claws of Canaries, Goldfinches, Linnets, Siskins, and Redpolls; besides, smooth perches are a disadvantage to birds always caged up, for they have to use them or none, for there is no choice, and thus no relief when all are alike constructed. It is true the branches and twigs of trees are round and often smooth, but they so vary in shape and possess a coating in the shape of bark, which birds can much better grasp and cling to than they can to perches smoothed and rounded to a degree of nicety with scraping and sand-papering as they are often prepared. No greater proof can be given as to the injury accruing to the feet of birds when their muscles are not brought properly into play than the fact of fowls suffering when having to ever contend with a smooth surface for their claws. There may be a great difference betwixt fowls and cage birds, but still if cage birds only suffer in a slight degree it is far better that Nature be assisted as much as possible if it is wished that caged-up pets should be maintained in a state of health to afford us pleasure. With such perches as I have above referred to birds lay hold of with more difficulty of maintaining their equilibrium when flying from or delivering themselves from perch to perch. This difficulty robs the birds of confidence and tends to bring about a weakness in their claws, more especially when the system is at a low ebb at the decline of summer

and the moultingsickness comes about. As a natural consequence the weakness flies to the extremities.—GEO. J. BARNESBY.

#### VARIETIES.

THE INCUBATOR TOURNAMENT AT HEMEL HEMPSTEAD.—The following are the results of the trials of the several incubators:—Christy's Hydro-incubator.—Number of eggs placed in incubator one hundred, found fertile ninety, unfertile ten. Christy's Hydro-incubator No. 2.—Eggs placed in incubator eighty, found fertile seventy-one, unfertile nine. Howell's egg-hatcher No. 1.—Eggs placed in incubator one hundred, found fertile sixty-seven, unfertile thirty-three. Howell's egg-hatcher No. 2.—Eggs placed in incubator sixty, found fertile fifty-three, unfertile seven. Cashmore's No. 1, heated by gas, failed. Cashmore's No. 2, heated by oil lamp.—Eggs placed in incubator fifty, found fertile forty-two, unfertile eight. Watson's Scotia, heated by oil lamp.—Eggs placed in incubator sixty, found fertile fifty-four, unfertile six.

—FROM the returns which have been presented to them from time to time since January last, the Liverpool underwriters have been able to make an interesting calculation as to the average per-centage of loss of live stock during the voyage from America and Canada. It appears that in the case of cattle the loss is about 8 per cent. of the numbers shipped; while sheep suffer to the extent of only 2 per cent. The heaviest mortality is in the case of pigs, being over 10 per cent. The compilation of these calculations has been carefully effected. They show a great diminution in the proportion of loss since the first establishment of the trade in live stock, at which time the deaths amongst the cattle amounted in many instances to 25 per cent. The decreased ratio is due to the more enlightened means which are now adopted for the comfort of the cattle on the voyage.

—IN spite of adverse seasons and the recent bad weather, Messrs. Webb & Sons' seed farms at Kinver present a very healthy appearance. A recent inspection of the principal farms held by this enterprising firm was sufficient to prove what is already well known—viz., that careful culture, good nourishment, and unsparing toil and trouble will do something to mitigate the evils even of bad seasons. With respect to the crops grown by Messrs. Webb & Sons at their various farms this year, we may say that they include over 180 acres of wheat, 146 acres of Kinver Chevalier barley, fifty-three acres of oats, thirty-four acres of peas, forty-one acres of potatoes, besides a large acreage of Webb's Imperial Swede, mangolds, and turnips. The other crops grown at Kinver for seed purposes include Kohl Rabi, carrots, Webb's new early drumhead cabbages, giant cow grass, thousand-headed kale, improved Italian rye-grass, &c. At the trial grounds we saw growing upwards of 1500 different sorts of flowers and vegetables, the latter including over 100 varieties of peas and 500 sorts of potatoes. We may also say that, apart from the stock seeds grown at the Kinver Hill Farm, thousands of acres are employed in other suitable parts of the kingdom for growing crops of selected cereals, roots, vegetable and other seeds under contract. —(Midland Counties Herald.)

—A COMMITTEE MEETING of the British Bee-keepers' Association was held at 105, Jermyn Street, September 10th, 1879. Present—Mr. Cowan in the chair, Rev. G. Bartrum, Messrs. Cheshire, Hunter, Hooker, J. P. Jackson, and Rev. H. R. Peel (Hon. Sec.). The minutes having been disposed of, the Chairman said he wished the Association to secure the copyright of Mr. Cheshire's diagram, which he considered ahead of any hitherto published, and had in reference to the matter conferred with Mr. Cheshire, who was willing to co-operate with the Association in the matter, but desired time to complete some points he was still investigating. It being felt that some pamphlet suitable to cottagers, aiming at plainness rather than style, was needed, Messrs. Cheshire and Hunter were requested to undertake the preparation of such a pamphlet. Mr. Cowan consented to read a paper at the next conversazione, October 15th, on wintering. The accounts to August 30th were presented, showing an outlay of £337 16s. 8d. and an income of £389 4s. 2d.; balance in Treasurer's hands £51 7s. 11d. Mr. J. P. Jackson stated that he found himself through press of business unable to attend to his apiary so constantly as he could desire, and he wished to place at the disposal of the Committee the only Cyprian queen of undoubted purity in the country, in order that the holder of her might if possible secure from her pure progeny, with a view to the establishment of Cyprians amongst us. Mr. Cheshire, at the unanimous request of the Committee, agreed to receive the queen in the hope of being able to raise queens in nuclei for his brother committeemen. A cordial vote of thanks to Mr. Jackson terminated the proceedings.

—THE Hertfordshire Bee-keepers' Association organised through the Rev. C. Hargrave, an apicultural exhibition on the 11th inst. at Harpenden, in connection with the local Horticultural Society, the success of which was in large part attributable to the kindness and tact of the gentleman just mentioned. The exhibits of honey were good for the year. Mr. John Hoar staged

"a hive of honey taken without destruction of the bees," which the Judge (Mr. Cheshire) at once pronounced to be the result of the labours of two stocks which had been storified and united. This the exhibitor when asked frankly acknowledged; and as the lower hive taken alone was ahead in the competition, he was awarded first, Mrs. Attwood coming second with a good skep, and Mr. H. J. Humphrey third with a similar hive which had been much over-smoked, however, in order to remove the bees. In the driving competition the time occupied by the winners—Messrs. H. J. Humphrey and Charles Sibley—was thirteen and nineteen minutes respectively. The drumming being on the whole much too violent, bees running up the hive side are constantly knocked down again by the too violent bang of the learner in his anxiety to drive them with all speed. The tent seemed as interesting as ever, and was crowded at the manipulation during which Mr. Cheshire lectured.

### THINGS KNOWN AND THINGS UNKNOWN.

EVERY bee-keeper knows, or should know, that bees have five senses—viz., sight, hearing, smell, touch, and taste; but nobody can say which of the five is the most important, which the most sensitive and which of least value. Bees, in common with many other creatures, possess all the senses and find them useful. The sense of smell in bees is extraordinarily keen and powerful. Probably all their senses are wonderfully keen. It is known, too, that bees have good memories, and can remember for days and weeks where they found food and water when they were last in search of it. If food be placed in any corner within their reach they will smell it and carry it home. If any be left they will go next day for it, even if the dish containing it be removed during the night. By scent they find food, and from memory they go to the place where they find it. If one swarm obtain access to the stores of another hive all the available forces are instantly put to work to rob the hive of all its stores. Again, if the hive that is being sacked be removed and another placed on its stand the robbers come as before for plunder, and on attempting to enter they find the resistance so determined and effective that they speedily abandon the work of pillage. Being scared by the strange bees the robbers evidently call into play more senses than one, and wisely stay at home. But how the knowledge of the work of plunder being checked is conveyed from bee to bee is not known by anybody, and is surprising to thoughtful observant apirians.

Many things about queens are known, and a great many things about them are not known. It is known that queens are hatched in royal cells, that they are hatched from common eggs or the eggs that would otherwise produce working bees, that they become perfect insects in royal cells six or seven days sooner than working bees are perfected in common cells, the one being fourteen days in hatching and the other twenty-one days. It is believed that queens are differently fed in their cells from the workers, and that the difference of treatment makes them queens, alters their form and colour, increases their size, and gives them dispositions and instincts quite different from those of working bees. These things are wonderful, but nobody can fully understand them. The mystery of the transformation of a common egg into a perfect queen by feeding, and of finding food to do it in seven days' less time than a worker bee is perfected, is very great.

It is well known that queens or princesses on coming to maturity and while in their maidenhood pipe at one another for three days and nights, but no one can explain the mystery and philosophy of piping. It is known, too, that queens are never fertilised in their hives, but no one can understand why it is necessary that such valuable lives should be exposed to the perils of excursions in search of mates. In such excursions many queens are lost. It is known that princesses go out on such excursions when they are a few days old, and in fine weather go out once, often more than once, every day till they are successful, or for about a fortnight. It is not well known how soon after birth or how late in life fertilisation can be effected. The first ten or twelve days of a queen's life has been considered the only time for mating with drones. When I was in Scotland last summer a bee-keeper told me that he had just seen a young queen go out on the fifteenth day of her age, and he expressed his fear that it was too late. I thought so too, but before I left he told me that she had been mated and the hive had sealed brood in it all proper enough. Unfertilised queens are valueless, for though they lay some eggs nothing but drones hatch from them. Queens that are properly or timely fertilised produce both workers and drones.

During the last fifty years we have known many queens live four years and die, but we have never known a fertilised queen become a mere drone-breeder before death. How little is known of the pageantry of the bees when a queen is born amongst them! How little of her superabundant fertility and of her superannation! From every standpoint the history of a queen bee is surrounded by a world of mystery. A queen eats often and eats much; but who has seen a queen bee at her own breakfast and dinner table? Who has seen her fed at all? Mr. Raitt tells us that queens are fed from the stomachs of working bees; that the

food is half digested by the bees and then given to their queen. What a marvel this is in the economy of a bee hive!

Admitting that a fertile queen lays 2000 eggs a day, who can tell when she finds time for sleeping, or whether she sleeps at all or not? Again, "regicidal knots" are common and well known, but who can explain their philosophy? Two swarms each with a queen may be cast together. Presently both queens may be found in the centres of hard balls of bees, so hard and well pressed together that they could be rolled on a table like a cricket ball. Every bee seems bent on squeezing the queen to death, and yet I have known queens remain imprisoned in these hard balls of bees for many hours uninjured, and at last liberated and saved by the hand of the bee-master. On every point of bee history some things are known and some unknown. Everywhere there is ample room for future research and deeper investigation. —A. PETTIGREW.

### OUR LETTER BOX.

FOOD ENOUGH FOR WINTER (J. G.).—Your hives which weighed 30 lbs. each, independent of skeps and boards, on the 3rd of September have food enough to keep large swarms till the end of March. The swarm hived in June has lost its queen, probably by reason of age, and has reared young ones which you have heard piping. As most of the drones are now destroyed you have some reason to fear that the piping queens may remain unfertilised and be useless. In about a fortnight you may find brood in the combs, which will enable you to ascertain whether the queen is fertilised or not. If she is a drone-breeder destroy her at once and unite the bees to another stock, or otherwise procure from another hive a queen for your strong stock.

WAX MOTH IN HIVE (L. L. R.).—The box arriving without the larvae, all of which had no doubt escaped through the crannies, we can only report upon the webby trails remaining. These are evidently the work of the wax moth, *Galleria mellonella* or *Achroia grisella*. The insects had already established themselves in the combs of the skep before the transfer, which operation so stimulated the bees that they set their houses in order, and tore out the trails and ejected the larvae, dropping them on the floorboard where you found them. If the combs be examined they will be found in places to be undergoing repairs at the spots from which the destructive pests have been removed. No special cleansing of the hive is necessary beyond simply sweeping away the debris and all grubs. We shall be pleased to receive an account of your bees. The hive will, we think, continue to improve yet, but you must be guided by weather, about which even prophets this season had better be dumb.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 33' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Barom. at Sea- level.	Hygrom- eter.		Direction of Wind.	Temp. of Soil 1 foot.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
We. 10	29.986	55.5	51.5	N.N.W.	56.5	68.0	46.8	114.7	45.5	—
Th. 11	30.015	58.5	58.5	S.W.	56.0	64.1	50.1	68.5	44.7	—
Fri. 12	29.716	60.5	57.0	S.W.	56.5	64.0	52.5	78.5	52.0	0.165
Sat. 13	29.731	56.9	56.5	W.	56.9	66.6	56.0	92.5	51.5	0.995
Sun. 14	29.906	56.4	53.0	N.E.	57.4	67.9	53.8	115.5	53.5	—
Mo. 15	30.018	58.5	53.5	N.N.E.	57.1	68.0	45.8	106.6	48.5	—
Tu. 16	29.980	58.1	56.1	N.	57.0	68.9	49.1	118.0	44.7	0.010
Means	29.895	57.1	54.4		56.7	66.5	50.7	102.5	47.8	0.085

### REMARKS.

- 10th.—Fine pleasant day; bright starlight night.  
11th.—Dull morning, generally cloudy throughout the day, only little sunshine at intervals; high wind; calm at night.  
12th.—Very damp gloomy day; heavy rain 5.30 P.M.; damp cloudy evening.  
13th.—Dull morning, rain commenced 3 P.M., very heavy rain from 4 to 6 P.M., dark and thick at 5 P.M.; wet evening.  
14th.—Dull in early morning, followed by a very clear bright day; bright starlight night.  
15th.—Thick white fog in early morning; very fine warm bright day; starlight night.  
16th.—Fine day but dull evening, with a slight sprinkle of rain.  
All the thermometric means are below those of last week except the rainfalls, which are about half a degree higher; atmospheric pressure rather greater than last week.—G. J. SYMONS.

### COVENT GARDEN MARKET.—SEPTEMBER 17.

We are now receiving good supplies of Plums, both home and foreign produce, and prices have been considerably reduced. Large consignments of Grapes still reach us from the Channel Islands, meeting with a ready sale. Trade quiet.

### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	2 to 3	Nectarines ....	dozen	4 0 to 13 0
Apricots.....	dozen	2 0 3	Oranges .....	dozen	4 0 to 15 0
Cherries.....	box	0 0 0	Peaches .....	dozen	0 0 0
Chestnuts.....	bushel	12 0 16	Pears, kitchen ..	dozen	0 0 0
Figs.....	dozen	1 6 3	dessert.....	dozen	2 0 4
Filberts.....	½ lb.	0 7 9	Pine Apples ....	½ lb.	3 0 6
Cobs.....	½ lb.	0 7 1	Plums .....	½ sieve	3 0 6
Gooseberries....	½ sieve	0 0 0	Raspberries ....	½ lb.	0 0 0
Grapes, hothouse	½ lb.	1 6 4	Walnuts .....	bushel	0 0 0
Lemons.....	½ 100	8 0 12	ditto .....	½ 100	0 0 0
Melons.....	each	2 0 5			



## WEEKLY CALENDAR.

Day of Month	Day of Week	SEPT. 25—OCT. 1, 1879.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.							
25	TH	Twilight ends 7.47 P.M.	65.3	43.1	54.4	5 52	5 51	3 55	morn.	9	8 16	268
26	F	ST. CYPRIAN.	65.7	43.8	54.7	5 54	5 49	4 14	1 13	10	8 56	269
27	S		65.3	44.6	55.0	5 55	5 47	4 30	2 30	11	8 57	270
28	SUN	16 SUNDAY AFTER TRINITY.	65.1	44.0	54.5	5 57	5 44	4 45	3 44	12	9 17	271
29	M	ST. MICHAEL. MICHAELMAS DAY.	65.5	44.3	54.9	5 59	5 42	4 58	4 56	13	9 37	272
30	TU		65.0	43.3	54.2	6 0	5 40	5 12	6 7	14	9 56	273
1	W	ST. REMIGIUS. Cambridge Term begins.	63.4	44.7	54.1	6 2	5 38	5 29	7 18	15	10 16	274

From observations taken near London during forty-three years, the average day temperature of the week is 65.1°; and its night temperature 43.9°.

## NOTES ON PEAS IN 1879.

**A**LTHOUGH it is generally admitted that the unprosperous season which is fast drawing to an end has been the worst for outdoor gardening anyone can remember, I think so far as the Pea crop is concerned it has been in no way inferior to that of more favourable years. In some respects, however, it has been different and very peculiar. Early Peas were very late and long in showing bloom, and the pods were extremely slow in filling or becoming fit for use, but the length of time they continued productive when they did come in was much longer than ever we experienced. Those rows from which we gathered in June were still bearing plenty of fine green pods in August. This fact we may regard as one of the advantages of such a season as this, as in hot weather Peas often come in and are over without giving what might be termed a succession of gatherings. This is especially the case in light soils, as I have no doubt many will have experienced. Mildew was also much checked during the season. I find, however, some varieties much more subject to this malady than others. Some with us now are quite free from mildew, while others in the same quarter are badly affected.

Peas sown last autumn were not a great success this spring. On November 18th we sowed Dickson's First and Best and Culverwell's Telegraph on a south border. The first named perished with the severe winter as soon as the growths came above ground; Telegraph remained strong and healthy during the whole winter, and in June we had such Peas from it as we never had before in that month, but they were not ready so early as William I. sown on a south-west border about the middle of February. This I consider the best early Pea, and is well worth extensive cultivation. Next to this Dickson's First and Best came in very well; it was also sown in February. Excepting one early Pea to come in quickly we do not think any of the second-class varieties worth growing to form a succession; but every means should be tried to get some of the fine new sorts in for this purpose. Those I chiefly refer to are Carter's Telephone and Challenger, and Culverwell's Telegraph. Those who grow William I. as an early sort and these three to follow, say from the middle of June until the middle of September, will secure such Peas as no one ever thought of possessing a few years ago. To have any of the three in use by the middle of June seed ought to be sown during the first week in February in rich soil in a favourable position. Other sowings should be made fortnightly until about the beginning of June. Then the question comes, Which are the best Peas to sow to come in for use towards the end of September and during October? Many would recommend Dr. Maclean, Omega, Champion of England, Ne Plus Ultra, or some of the early varieties, but after trying all of them we have found none of them to equal two new varieties which are sure to take a high place amongst Peas, especially late ones, when they become known: their names are Richard Gilbert and Laxton's

Sturdy, the leading characters of both being no mildew at this season of the year, and a flavour surpassing the late varieties just named. Their flavour when raw pleases everybody, and when cooked they are delicious. With us Richard Gilbert is larger in the pod and pea than Sturdy, and it appears more robust in growth, and in flavour it is superior to Mr. Gilbert's other new Pea Hobart Pasha. This variety produces very handsome well-filled pods, and although not so good as the variety I have just named it is certainly superior to many sorts generally cultivated as main crop Peas. Before leaving Sturdy I may say that in flavour it surpasses all other varieties of Mr. Laxton's Peas we have grown, and we have tried the most of them. Dr. Maclean and Carter's Little Wonder are two Peas which have never pleased us, as the pods fill so unevenly under the same culture as others succeed with. For a large-podded variety we have grown none to surpass Laxton's Superlative, and if it only filled as well as Fillbasket it would be most valuable, but the large pods are seldom to be found more than half filled.

Veitch's Criterion, introduced last year, is an excellent Pea to produce well-filled pods with six and seven peas in each, but with us it does not boil quite so tender or sweet as some others. Amongst other varieties Maclean's Best of All, Laxton's Standard, Sharp's Invincible, Commander-in-Chief, Ne Plus Ultra, Duke and Duchess of Edinburgh, Nelson's Vanguard, and several others have not succeeded so well as we could wish this year.

Our Pea seed is annually sown thinner and thinner, and we find this plan answer better and better; in fact when the drills are opened about 1 foot in width with a spade, and the seeds put down singly all over about 3 inches apart, we find the pods as numerous and of finer quality than when the seed is sown so thick that the young plants come up in a mass. In sowing seed in autumn or early in spring it is safest to sow it pretty closely if snails or other pests are likely to be troublesome, but when these can be warded off thin sowing is the plan to adopt, as the plants come up more strong and healthy when clear of each other, and are therefore better able to withstand severities of weather. In light poor soils all Peas should have a liberal quantity of manure to feed on, but when the soil is rich an addition of manure to it is liable to force them more into leaf than fruit.

I am of opinion all Peas sown in autumn should have a poorish soil, as the hardier they can be made to grow the better, and stimulants in the shape of liquid manures can always be applied at the proper time in spring.

I would advise all who have the chance to try a few varieties of Peas annually by way of testing their merits; they will find it an interesting occupation, and not at all the unprofitable undertaking which some are inclined to think it. In these days of bewildering variety of vegetables knowing what to avoid is of as much importance as what to grow, and the practical solution of these problems not only prevents much disappointment in many instances, but is a great gain in saving ground and labour from cultivating worthless or inferior crops and securing superior produce. Some think and even assert that the "good old varieties" of many vegetables are yet unsurpassed. In

very exceptional cases this may be so, but as a rule that theory will not bear the test of experience, and if there is one thing more than another to which this remark applies I think it is Peas.—J. MUIR.

### ROSES IN TOWNS.

I THOROUGHLY agree with "BICEPS" as to the difficulty of growing the Rose in smoky situations, and I am of opinion that anyone who succeeds in growing the queen of flowers well here accomplishes a far greater feat than our more favoured brethren in the south. Considering the long and severe winter, my losses have even been less than in some milder ones; and my experience on this point seems to have been different from that of the Rev. C. P. Peach, which is all the more surprising, as the snow and frost came on before I had an opportunity of mulching the beds with manure. I agree with the few Roses you recommended to "A BEGINNER," and with "BICEPS" I can recommend Marquise de Castellane, which grows well here. "BICEPS" is suspicious of Charles Lefebvre. It grows and blooms well here, but its duplicate, Marguerite Brasseur, does even better, being the more vigorous grower, but the flowers are alike. La France on the seedling Briar and Madame Victor Verdier do well here, and John Hopper is the freest I have and does not blight. The remarks of "BICEPS" as to Général Jacqueminot I am surprised with, as it is everybody's Rose, here doing splendidly in almost any situation.

The following do well here—Abel Carrière, Abel Grand, Annie Wood, Auguste Rigotard, Beauty of Waltham, Beattie Johnson, Boule de Nègre, Charles Lefebvre, Capitaine Christy, and Marie Baumann on seedling Briar; Comtesse de Serenye, Camille Bernardin, Dr. Andry, Duke of Edinburgh, Duchesse de Vallombrosa, Dupuy Jamain, Edouard Morren, Ferdinand de Lesseps, Fisher Holmes, Jean Liabaud, Jules Margottin, Lord Macaulay, J. Stuart Mill, Baronne de Rothschild, Madame C. Joigneaux, Madame Nachury, Madame Lacharme, Mdlle. Eugénie Verdier, Maréchal Vaillant, Magna Charta, Etienne Levet, Paul Neyron, Pierre Notting, Prince Camille de Rohan, Princess Beatrice, Princess Mary of Cambridge, Reynolds Hole, Sénateur Vaise, Sir Garnet Wolseley, Victor Verdier, and Miss Hassard. Gloire de Dijon and Souvenir de Malmaison also grow well and bloom splendidly. Of the former Rose I only end the shoots, but cut out the weak ones, and find this treatment to suit it. The season here has been a very unfavourable one—so much wet, but I have had finer individual blooms than I ever had, the dark Roses being the best. The light blooms rotted off with the wet.

To "A BEGINNER" "BICEPS" recommends liquid manure. I should judge that he lives either in a town or very near. Doubtless if this is so, manure being scarce and the soil light, liquid manure will be a benefit. I live about four miles out of the town, my garden being unprotected, with a strong loamy soil and clay bottom. I do not use any liquid for plants in the open ground, finding that it brought much mildew. In this I am fortified by the opinion of the Rev. C. P. Peach (see "Rosarians' Year-Book" for 1879). My treatment is to mulch heavily in winter with stable manure and fork it well in the spring, pruning the trees in March or beginning of April. For a summer dressing I adopt the treatment recommended by Mr. Rivers, mixing dust from a malt kiln with stable manure minus straw, in equal quantities, letting it stand for a day or two, watering a few times with liquid manure, and then using it as a top-dressing in, say, April and May, and it soon tells a tale. This mixture must not ferment, as the smell is something horrid.

My plants are mostly dwarfs on the Manetti. "BICEPS" says the lives of town Roses are short, but I have found that they last much longer by taking them up and replanting in two or three years' time. Some of mine that I moved last autumn I found had made good roots above the stock, so I cut the stock away, and they have done better than ever this season. I join with "BICEPS" in thanking "WYLD SAVAGE," Canon Hole, "D., Deal," Rev. C. P. Peach, and others for their interesting articles from time to time in your valuable Journal; but living as we do in a less genial climate our experience does not always correspond with theirs. Being a non-exhibitor and only growing the Rose for the love of the flower, although a lover and attendant of Rose shows, I often sigh as I look at the gems at the great shows and think I should like to grow similar blooms, but found to my cost on trying, that some of the choicest sorts are not suited to these smoky districts, so have to fall back on the vigorous growers. Sultan of Zanzibar and Reynolds Hole

are quite distinct with me, but the latter is more suitable, being the better grower. The Sultan blooms well, but has hardly grown at all this season. I look with interest for the election of garden Roses.

In answering "BICEPS" my wish has been to encourage the growing of the Rose near large towns, as one sees them planted and then left to shift for themselves, and consequently they die off in a year or two, then people say they will not grow with them. The same people on seeing the Rose garden of one who has a pride in trying to grow them well say, "Ah! you have a different soil to mine," when, as a rule, it is the neglect rather than the difference in soil and situation. If this is of interest I shall be glad to answer the remarks of those who live in similar districts, but will promise to keep clear of giants and "WYLD SAVAGE."—F. W. J., Bradford.

### AUTUMN ORNAMENTS.

THE following plants are highly attractive in the autumn, and should be grown in all villa gardens if suitable positions can be found for them.

CLEMATIS JACKMANII.—This is well known now, and is deservedly popular. Its purple flowers are for several weeks at this season of the year extremely bright and abundant. The flowers frequently measure 6 inches in diameter, and when produced in masses against walls, over porches of houses and cottages, are easily distinguishable some hundreds of yards distant. It is also very attractive when planted on rootwork and allowed to ramble over it, also when grown in beds and trained regularly around stout pyramidal wire trellis. Sometimes this variety, with others, are trained along chains, forming beautiful festoons. To ensure a good effect the first season it is of the greatest importance that strong established plants be procured during the winter months, and planted out in ground to which some well-decayed manure and leaf soil has been added; plant them about the middle or end of March, at which time they may be expected to escape any check from late spring frost. Timely attention to training is all that is required afterwards. The following spring the plants should be cut hard back, the soil around loosened with a fork and mulched with manure, and as the young robust growths are produced regulate them as before.

HYDRANGEA PANICULATA GRANDIFLORA.—At the present time this plant is in its fullest beauty, and from its hardiness and the freedom with which its massive clusters of pinkish-white flowers are produced it is worthy of being classed amongst one of the best of deciduous hardy flowering shrubs. As a low-growing shrub in a mixed border we have nothing at this season of the year to equal it, for its flowers remain in beauty a very long time. When not in flower its habit and strength of its wood have not much to recommend it. We received two of these plants from a nursery in the autumn of 1877, and so weak-looking were they that we despaired of having any bloom for a few years, but the following autumn every growth produced a truss of bloom. Since then one plant has been unfortunately killed, but the other has flowered again most profusely and is now very fine. As the trusses of bloom are too heavy for the slender wood we have staked every flower truss, which displays them to the best advantage.

HYPERICUM OBLONGIFOLIUM.—This is a very attractive shrubby species with beautiful showy bright golden waxy flowers that when seen at a distance may be mistaken for small yellow Roses. It is free-flowering, and very showy at a time when most other flowering shrubs can only lend their foliage to add to the effect and beauty of a garden. This species with a few others merit a little more popularity than they have yet obtained.—J. W. MOORMAN.

### STOPPING AND TRAINING TOMATOES.

DIRECTING Tomatoes to be stopped as are Cucumbers is liable to mislead. All secondary shoots from Tomatoes show bloom when they have made four or five leaves. The stopping should be done a leaf or two beyond the bloom, and besides as soon as the framework of the plant is formed every shoot from the axil of the leaves should be taken out as soon as it can be got hold of. The latter point not being clearly insisted on is where the directions sometimes given are imperfect. It should be done whether the half dozen bunches the plant is allowed to bear are upon short laterals from an upright stem, which is the best method for walls, or upon the branches of a fork, produced by stopping the plants when they have three or four

leaves, which is the best way of growing them to sticks in the open ground. In the latter way the two limbs of the fork must, of course, be allowed to extend themselves after bearing their first blooms till three of the latter are upon each shoot. Then these shoots are to be stopped a leaf beyond the last bunch, and all axillary ones from them carefully eradicated as they come.

In this neighbourhood Tomatoes in the open air, however skilfully trained against a south wall, are likely to prove a failure. They have only set a few of their blooms.—A. BOYLE, *Pembrokeshire*.

## FRENCH NOTES.—No. 2.

### FONTAINEBLEAU.

SCLDOM have I paid a visit that more saddened me than that which I recently paid to my good old friend M. Souchet at Fontainebleau. It is now upwards of twenty years since, impelled by a desire to know the man who had elevated the *Gladiolus* into the rank of a florists' flower and had done so much to enrich our English gardens in autumn, I ventured to call upon him at Fontainebleau. I had no introduction, nor did I need any. All who have ever been brought into contact with him will readily believe that, for a man more full of real kindness, more amiable and thoughtful for others, could not possibly be. We became friends, and never but once since then when I have visited France have I failed to pay him a visit. His amiable and excellent wife, too, was ever ready to welcome me. He was at my first visit the *jardinier-en-chef* at the Château, but some few years afterwards he retired to the beautiful new house he now occupies. About forty years ago he was attacked by a malady of the skin, which has resisted all remedies, and has gradually overpowered what must have been naturally a strong constitution. He is now a complete wreck, can hardly move about, and has to be lifted up by means of an ascenseur; but in heart and spirit he is still the same kindly lovable man that he ever was. His horticultural establishment has passed into the hands of Messrs. Soulliard and Brunelot. He himself takes an interest in seeing the improvement each year makes in his favourite flower, and during the season his rooms are decorated by Madame Souchet most artistically with it. Of these I shall have more to say presently. But there was another saddening influence in my visit, and that was the condition of the Forest itself. It is not too much to say that those who recollect it in its glory will not see it again for many years as it used to be. I read some time ago in an article in the "*Revue des Deux Mondes*" of the destruction caused by what is called in France "*verglas*," and which we should designate as frozen rain, but I had no conception that it was anything like what it is. It appears that there had been a heavy fall of snow with which the trees were laden; a thaw set in, but suddenly it turned to rain with a cold wind, and the rain as it fell froze. Thus the trees became weighted, not with snow, but with ice of some inches thick. The consequence was, that becoming brittle under the influence of the frost, they snapped and broke in all directions. Where, in the fork of the branches the deposit had been the greatest, there the destruction was most certain. All of the trees suffered, but more especially the Firs and Birch, as far at least as I could see. Had I been told that the German troops had been practising with cannon to see what destruction they could effect I should not have been surprised, for it was just as if a large shot had hit the tree and scattered the branches in all directions. You might see acre after acre cleared as completely as if the fellers had been at work, and I was told that it would take twelve years to clear away the débris. The streets of the town were in such a condition that skaters could go from one end of it to the other.

The lateness of the season did me at least one kindness—it enabled me to see the *Gladioli* of Messrs. Soulliard & Brunelot in their full beauty, and a great treat it was; for while the main collection of the older varieties are grown at Montereux, the newer ones and the seedlings are grown at Fontainebleau; so that I had the opportunity, not merely of seeing those in commerce, but also those which they purpose sending out next year. There was thus an opportunity of comparing them, and also of seeing some of those which were just showing their first bloom, destined to be the favourites perhaps in coming years. I had also much conversation with the raisers on the varieties sent out, and on what seemed to me a difference between the English and French taste in this matter; for although flowers such as *Horace Vernet*, *Murillo*, *Camille*,

*Meyerbeer*, and others which come up to our notions are considered as good, there are others which were pointed out to me as good which we should not class as such. Again, I saw varieties which I have never been able to see in good form at home which were simply beautiful, a difference probably in soil and climate effecting this. I could find, too, traces, although only in a slight degree, of the malady from which we suffer so much here, but there it unquestionably was. It may be, and probably is, aggravated by the lower temperature and moister atmosphere of our autumns, but that it there exists there can be no doubt. My friends were very much astonished when I told them of my great losses, but said they knew something of it, and attributed it to some malady which was more injurious in some sorts than others.

Amongst the varieties of the past season which struck me as particularly good, but which I fear, owing to the lateness of the season, I shall not be able to see in my own garden, are the following:—*African*, a very remarkable dark flower; I think perhaps the darkest yet raised. The ground is scarlet, but flushed with a deep brownish crimson, the effect of which is heightened by a large white spot in the centre of the flower. The spike is a well-formed one, and the flowers are closely packed together. *Hesperide*, a large and well-formed spike; the flowers white heavily flaked with salmon rose. *Ovide*, a very long spike of carmine red flowers, with a white line on each petal and large white spot in centre of the flowers. *Pygmalion*, long spike of large flowers, cerise red flamed with deeper red; pure white spots edged with violet. *Émeraude*, a remarkably coloured flower, French white ground edged and striped with rose, with large citron yellow blotches in the centre of the lower petals; a very distinct variety. Many of older flowers, such as *Psyche*, *Leda*, *Murillo*, *De Michel*, were in great beauty, and altogether the treat was one I am not likely to forget.

The *Gladiolus* is not the only flower which is being improved by our friends at Fontainebleau. They have taken the *Amaryllis* in hand, and an immense quantity of seedlings had bloomed in the open air. They are of the *vittata* race, and are consequently nearly hardy in that part of France. They are simply cultivated like any other hardy bulb, are left in the ground all the winter, and only slightly covered with leaves. They are of two distinct characters, one having pure white ground, the other red, and are marked and ribboned with white, red, salmon, purple, &c., and when blooming they must be a grand sight. Of course at this season they were all over. They would succeed with us under ordinary greenhouse treatment, and to those who cannot give heat they ought to be a boon. Those who can would probably prefer the more showy *formosissimum* race, but to amateurs of small means and space they would seem to afford a fresh field of enjoyment.

We are constantly complaining of our climate, and this year we have some good reason to speak of it as bad, but when comparisons are instituted between it and that of the north of France it is as well to be remembered that there is a slight mistake on the point. I do not believe that until you get to Paris there is much difference. The corn was in about the same state of unforwardness that it was about my own home when I left it, and the fruit crops as poor as with us. The famous *Montrieux* Peaches had not the flavour of former years, and even at Fontainebleau where so many of the *Chasselas* Grapes are grown, and from whence they are supplied in large quantities both to the Paris market and foreign countries, it was very much doubted whether many of them would ripen this year. Even at Thomery, where they are grown in greater abundance still, the same complaint was made. "I should not," said M. Soulliard, "like you to say that you left Fontainebleau in the middle of September and were not able to taste our Grapes;" and so out of some very sheltered nook he managed to get me a small bunch; it was, however, hardly ripe. I mention these little matters to reconcile ourselves to the most unaccountable year that one has probably ever passed through.—D., *Deal*.

### CLETHRA ARBOREA.

I AM very glad to see that this rare old plant is being taken a little notice of, for it is an excellent evergreen greenhouse shrub, and is one of the very few that will stand rough treatment and yet give satisfactory results. A few years ago a plant of it, probably twenty years old, was under my charge for over three years; it was in a 12-inch pot and had been so for a long time, and was still in the same pot when I left. Want of room prevented this and many other plants from

being potted on or shifted into tubs; but *Clethra arborea*, although not annually potted, or even watered with any stimulants, never failed to keep its foliage green and always flowered freely every year. It was placed outdoors during the latter part of the summer and housed in October. It was watered freely when making its young growth, and was wintered in a cool airy greenhouse principally with Australian plants. Its height was about 9 feet; the flowers were sweet and very useful for cutting, and the engraving of it in the *Journal* a few weeks ago was a very good representation of it.—H., *Peterborough*.

#### PEACHES AND NECTARINES IN DORSET.

OF these fruits I have had an excellent lot under glass of fair size, specially of Early Louise, the best very early Peach; Barrington, Early Alfred, Royal George, and Grosse Mignonne. Out of doors I have a very satisfactory crop as regards numbers, but they swell slowly. The Princess of Wales, Dr. Hogg, Early York, Nectarine Peach, Early Ascot, a fine colour; Noblesse, Royal George, Golden Frogmore and Bellegarde, and Rivers's Orange and Elruge Nectarines are to the fore. At one time I despaired of their ripening, but since we had a little sun they progress, but I hardly think they will be their usual size; if they ripen not I shall have them preserved whole. The wood for next year is very good.—W. F. RADCLIFFE, *Okeford Fitzpaine*.

#### TWELVE HARDY HERBACEOUS PLANTS OF THE MONTH—SEPTEMBER.

HERBACEOUS borders in the present month are not in general the most attractive portions of the flower garden, yet there should still be plenty of bloom in good collections. Extreme neatness is now needed to render the borders enjoyable, and autumn propagation by division may still be carried on. The following are some of the best.

*Liatris spicata* (the Long-spiked Liatris).—A handsome erect-growing Composite with stiff flower stems 2 to 3 feet high, clothed with linear leaves, and bearing spikes 10 inches long of light purple flowers. From each floret long filaments of a lighter colour are projected, and the flowers open in succession from the top of the spike downwards. Increased by division of the tuberous corm-like roots. This plant is a native of North America, where it is known as the Button Snake-root.

*Sedum spectabile* (the Showy Sedum).—This is the very best of the Orpine section of Sedums, and is well known as a fine autumn-flowering plant. The flowers are in large corymbs, sometimes as much as 6 to 8 inches across, and are a light rosy purple. In open sunny situations the plant seldom grows more than a foot or 15 inches high, and it is admirably adapted for growing in beds or borders, or for pot cultivation. There are several varieties with lighter or darker shades of purple, and one with faintly variegated leaves. Propagated by seed, division, or cuttings. Native of Japan, and better known as *S. Fabaria*.

*Anemone japonica* var. *Honorine Jobert* (the White Japanese Anemone).—A continental variety of the Japanese Anemone, having pure white flowers 2 inches across with yellow stamens. It grows 3 feet high, and has large, downy, Vine-like leaves. Propagated by cuttings of the creeping underground shoots or by suckers, which are plentifully produced when once the plant is established.

*Tritoma Ucaria* (the Poker Plant, or Torch Flower).—This noble Lilywort is too well known to need description, being one of our most valuable autumn flowers. Of a number of varieties grown, that known as *glaucescens* seems to be the best, producing enormous spikes of tubular flowers, vermilion shading into orange-yellow. Can be propagated by seed, but the seedlings frequently come inferior to the type. Division in spring is preferable, or if divided in autumn the plants should be wintered under glass. Succeeds best in deep rich soil, which should be liberally manured. Native of the Cape of Good Hope.

*Sida malaciflora* (the Mallow-flowered Sida).—This tall Mallow is not usually accounted a choice plant, its habit being long and leggy, but the beautiful rose-coloured flowers, often 3 inches across, are invaluable for cutting late in autumn. Only suitable for the back lines of large borders or among shrubs. Propagated by seed or cuttings. My stock of plants was raised from a packet of seed had from Mr. Ware some

years ago, and there is a marked variation in the plants both as regards size and colour of flowers, from which I infer that it is a plant capable of being improved by crossing. A native of Mexico.

*Galatella hyssopifolia* (the Hyssop-leaved Galatella).—A pretty Starwort, bearing corymbs of pale purple narrow-petalled flowers with yellow discs. It grows about 18 inches high, and has slender stems clothed with narrow pointed leaves. The flowers form a loose corymb, and appearing as they do in succession the period of bloom is more prolonged than in most of the Asters, to which it is nearly related. Increased by division. Native of North America.

*Helenium atropurpureum* (the Dark Purple Helenium).—This handsome Composite, not often seen in collections, grows 2 to 3 feet high, and bears numerous large flowers of various shades of purple and which are slightly fragrant. Though impatient of heavy clay it is quite hardy in rich light soils. Native of Texas.

*Chrysocoma Lynceyris* (Goldyllocks).—One of our rarer natives, but yet a pretty flowering border plant. It throws up many small wiry stems thickly covered with narrow leaves, and bearing corymbs of yellow button-like flowers. This species seldom grows over 2 feet high, and is increased by division in spring.

*Aster novi-belgii* (the New York Starwort).—This is one of the best of a very numerous family, which includes many species not worth growing. The flower stems rise 3 or 4 feet, bearing in open racemes numerous light blue flowers. Native of North America.

*Saponaria officinalis* fl. pl. (the Double-flowered Soapwort).—The single Soapwort is a not uncommon native plant, and is the only representative of the genus in Britain. The double form grows about 2 feet high, and its flowers are a very light pink or flesh colour, not unlike small blooms of some of the Tree Carnations. The plant throws out numerous underground shoots, and in this way propagates itself to an extent sometimes not desirable. A variety of the single form with yellow variegated leaves is well worth growing.

*Lobelia syphilitica* (the Tall Blue Lobelia).—The genus *Lobelia* gives us some splendid herbaceous plants, but as in these notes I have avoided quoting any that require the protection of glass during winter, this is the only species admissible. Having grown it for many years without losing a single plant from frost, whilst *L. fulgens* and *cardinalis* left out have been destroyed, I can answer for its hardiness. It, however, falls far short of these species as an ornamental plant. It grows about 2 feet high, bearing leafy spikes of light blue flowers, passing to white on the lips of the corolla. Propagated by seed or by removing the offsets in autumn. Native of Virginia.

*Hypericum olympicum* (the Olympian St. John's Wort).—This is a neat symmetrical plant, forming compact bushes 15 to 20 inches high. The stems are slender and woolly, covered with smooth pointed leaves, and bearing numerous bright yellow flowers, each nearly 2 inches across. In some catalogues it is said to be a recent introduction, but it appears to have been known in this country in the early part of last century. Increased by cuttings. Native of Greece and the Levant.—R. D. TAYLOR.

#### FORCING STRAWBERRIES.

"FORCER" is certainly astray in his idea of the points under discussion—viz., layering the runners into the fruiting pots versus divesting them from the parent plant, potting in 3-inch pots, and drawing up weakly in close frames. Many besides myself are ignorant of the disadvantages "FORCER" would have us believe are connected with placing the runner first of all in the pot it is intended to fruit in. Our ideas are that the plan we condemn might amuse some who have abundance of labour at command, and can afford time to carry out the severing and close-frame system of cultivating Strawberries. We still say a system that economises labour has a decided and great advantage, especially so when the produce is equal, or in many cases superior, to that of other systems. The practice of layering into fruiting pots is not cast on one side so much as "FORCER" concludes it is, but is each year being more largely practised. Layering into the fruiting pots is largely practised in Lancashire and by the majority of good growers round Liverpool. Those who once fairly adopt the system are slow in discarding it for others.

We are extremely obliged to "FORCER" for his reference to

Mr. Thomson's valuable work. We have no special desire to discuss any of the points the author of "Fruit Culture under Glass" has decided upon for the guidance and instruction of those who seek knowledge from that excellent work. It would be well for many gardeners to test for themselves the advantages and disadvantages of a system before condemning it. The most remarkable thing in "FORCES'S" letter is that he points to the plants of Mr. Thomson and the produce of those plants, and in his own words "better he never saw," and then goes on to describe his system of preparing the plants. Why does he not follow the advantageous system he points out and tell us of his own practice?—W. BARNET.

#### NEWCASTLE HORTICULTURAL AND BOTANICAL SOCIETY.—SEPTEMBER 17TH AND 18TH.

THE above Society have held their third Show for this year. To each of these Shows it is the object of the directorate to give a distinctive character—the spring Show for Hyacinths and other flowering plants, the summer Exhibition for plants in general, and the autumn for fruit and florists' flowers. This Show was held on Wednesday and Thursday last in the Town Hall and Corn Exchange. It is a pity that the Society have not a larger place for their purpose, for the space, large as it is, is decidedly too small for the dimensions to which the Show has attained, and the productions of many nurserymen who wished to send plants for exhibition and embellishment could not be accepted.

The Show was a very large and excellent one, indeed it was declared by many competent authorities present to have been the best fruit and florists' flower show that has been seen in England this year. In many places cultivators have failed to produce Hollyhocks or Gladioli in exhibition form this season, but at Newcastle those flowers were thoroughly represented, and although they were not equal to those generally shown in the north yet they were considered extraordinary for the season.

The fruit was a great improvement on last year, especially the Grapes, which were the admiration of all who saw them, and in some of the classes there were ten and fifteen entries, and consequently many excellent dishes received no awards. Peaches, Nectarines, and other hardy fruits were also good, but most of the examples had probably been grown in orchard houses. The epergnes and table decorations, which always form an important feature of the autumn exhibition, were both numerous and good. The table decorations were on the centre table in the Corn Exchange, which extended the entire length of the hall, and betwixt each competitor's table were placed two sets of table plants; this assisted to define the tables, which was very convenient to visitors. On both sides of the central table were the tables with the fruit and florists' flowers, and on looking down on the Exhibition from the staircase leading to the Town Hall the effect was very fine. We are glad to record that two Judges were provided for each section of the Show. We have previously pointed out the necessity of this, as the magnitude of the Exhibition renders it almost impossible for one man to adjudicate satisfactorily in so many classes. On this occasion the awards appeared to give general satisfaction. The Committee are still as assiduous as ever in their endeavours to still further raise the standard of their exhibitions, and we have no doubt they will succeed. We will now refer to the classes, commencing with the

**FRUIT.**—For eight dishes of fruit there were six competitors. Mr. Laidlaw, gardener to the Rev. J. Burdon, Castle Eden, receiving the premier award with a very fair Smooth-leaved Cayenne Pine, very fine Black Hamburgh and Buckland Sweetwater Grapes, Violette Hâtive Peaches, Elruge Nectarines, Figs, Goliath and Jefferson's Plums, and a moderate Melon. Mr. Westcott and Mr. Ingram, gardeners to the Dukes of Cleveland and Northumberland, of Baby and Alnwick Castles, were placed equal second; Mr. Westcott showed a Smooth-leaved Cayenne Pine, rather small; magnificent Black Hamburgh Grapes, perfect in every respect; and Waltham Cross, a very rich amber, and very compact; splendid Royal George Peaches, well-coloured Pitmaston Orange Nectarines, very large Moor Park Apricots, and Golden Gem Melon. This was quite equal to the premier collection. Mr. Ingram's best dishes were excellent Black Hamburgh and Muscat of Alexandria Grapes, a very fine Smooth-leaved Cayenne Pine, Violette Hâtive Peaches, and Pitmaston Orange Nectarines. Mr. Jowsey, gardener to G. Gilpin Brown, Esq., of Sedbury Park, was third; his Muscat of Alexandria and Black Hamburgh Grapes were very good, also were the Peaches and Nectarines. All the collections were highly meritorious. For six dishes of hardy fruit, which were, generally speaking, fine, Mr. Westcott was first with Goliath Plums, Morello Cherries, White Juneating Apples, Semper Fidelis Raspberries, exceptionally large and fine; Talfourd Gooseberries, and the Baby Castle Currant. Mr. Ingram was second, and Mr. Mann, gardener to Mrs. Hornsby, St. Vincent's, Grantham, third. In these collections the notable dishes were May Duke Cherries, Gloria Mundi Apples, and Golden Drop Plums.

**Grapes.**—In the class for six bunches of Grapes, not less than

three varieties, ten excellent lots were staged, all possessing considerable merit. Mr. A. Kirk, gardener to Mrs. McFie, Brnespie, Castle Douglas, was first with superior examples, both bunches and berries being fine and possessing high colour and finish. The varieties were Black Hamburgh, Buckland Sweetwater, and a marvellous bunch of Black Alicante. The bunches averaged about 4 lbs. each. Mr. Kirk is unquestionably a thorough Grape-grower and has had great success in Scotland, and yet, to his credit be it said, he has only one vinery 80 feet long. Mr. Jowsey, gardener to G. Gilpin Brown, Esq., Sedbury Park, Richmond, was an excellent second, and possessed more varieties than Mr. Kirk. His bunches were exceedingly fine of Muscat of Alexandria, Black Hamburgh, Trebbiano, and two fine bunches of Black Alicante. Mr. Westcott was third with Black Hamburgh, Muscat of Alexandria, fine but rather small in bunch; Mrs. Pearson, and Golden Champion without a spot, and a very fine bunch of Gros Colman, extraordinary in berry but scarcely ripe. Mr. Witherspoon of the Red Rose Vineries, Chester-le-Street, ran him closely, but his bunches were scarcely ripe although fine in other respects.

For two bunches of Black Hamburgh no less than seventeen lots were staged, Mr. Hanson, Grey Towers, Northallerton, being first with fine examples beautifully coloured, about 2 to 3 lbs. weight. Mr. Westcott was second, his bunches being good but smaller than the first. Mr. Laidlaw and Mr. Stainthorpe, Ormesby Gardens, Middlesbrough, received equal thirds. An excellent class. For two bunches of Black Alicante, Mr. Hammond, gardener to Sir Wilfrid Lawson, Brayton Manor, Carlisle, was first with superior produce; Messrs. Ingram and Hanson following next with larger but not such well coloured bunches. For two black bunches of any other kind, Mr. D. P. Bell, Olive House, Alnwick, was first with Alnwick Seedling of magnificent appearance. They were splendid bunches, and the berries were of great size and fine colour, and elicited general admiration. Mr. Ingram was second with two remarkably fine bunches of Mrs. Pince 2 to 3 lbs. weight; Mr. Jowsey following with very good bunches of Barbarossa. For two bunches of Muscat of Alexandria nine lots were also staged, Mr. Jowsey being first with well-coloured examples; Mr. J. Aitken, Kirkleatham Hall, second; and Mr. Ingram third. For two Buckland Sweetwater Mr. A. Kirk was first with fine and spotless examples, Mr. Laidlaw had the third position. For two bunches of any other white Grape Mr. A. Kirk was again first with two fine bunches of that magnificent summer Grape Duke of Buccleuch, faultless in colour and fine in shape; Mr. Carrick and Mr. Laidlaw following in the order named. For the heaviest bunch Mr. Kirk again followed up his success with a good bunch of Trebbiano about 18 inches long and the same across, weighing just 10 lbs.; Mr. Ingram was second with White Tokay, 6 lbs.

**Pines and Melons.**—There were only three Pine Apples. Mr. Noble, gardener to T. Fry, Esq., Woodburn, Darlington, took first with a very fine Queen between 4 and 5 lbs. weight; Mr. Laidlaw and Mr. Ingram having the remaining prizes. A dozen Melons were staged, some were very inferior. Mr. Hammond was first with a finely-netted green-flesh of good size; Mr. A. G. Brown, gardener to T. Barnes, Esq., Whitburn, second with a fine deep green-fleshed Melon named Mark Thompson; and Mr. James Thompson was third.

**Peaches and Nectarines.**—Peaches were without exception exceedingly fine. Mr. Forsyth, gardener to George Carine, Esq., Monkton Hall, Boldon, was first with Noblesse, finely coloured and very large; Mr. Hammond being second with a mixed dish, and Mr. T. Henderson third. Nectarines were also very good. Mr. Ingram was first with Pine Apple Nectarine; Mr. R. Thompson, Rose Villa, Bedlington, second with the same variety; and Mr. Elworthy of Court Hay, Liverpool, third with Elruge. Twelve lots of Apricots were exhibited, Mr. Westcott securing an easy first with Moorpark, very large and well ripened for the north.

**Apples, Pears, and Plums.**—Many dishes were staged, but the fruit was not of superior quality: most that were ripe appeared to have been grown in orchard houses. For twelve dessert Apples in four varieties Mr. Rylance, Oughton, Ormakirk, was first with Irish Peach, Red Astrachan, Red Quarrenden, and Lord Derby. For twelve baking Apples Mr. Rylance was again first with Earl Derby, Lord Suffield, Surprise, and King of Apples. Twelve Pears in four varieties Mr. Wood, Fenham Hall, was first with Williams' Bon Chrétien, Duchesse d'Angoulême, Beurré Giffard, and Windsor. Twelve dishes of Plums were exhibited, Mr. Hanson winning with Greengage. In addition to what was for competition the Rev. C. P. Peach sent for exhibition a large collection of fruit—namely, forty varieties of Apples, twenty-five of Pears, and fifteen of Plums. Some branches of the Victoria Plum were completely laden with fruit—a very interesting and valuable contribution.

**TABLE DECORATIONS,** as we have said before, were very extensive, and nearly all possessed considerable taste and merit. The President's prize of a ten-guinea cup was taken by his own gardener (Mr. Thompson), who was pre-eminently in the front. His table was well filled, and yet not too heavy. A Marsh stand formed the centre, with two smaller ones at the end; the top of the former was chastely filled with Water Lilies, Tacsonia insignis, the flowers drooping down; the base being done with



richer colours of *Allamandas*, *Dipladenias*, and *Ixoras*, all margined with *Davallia Mooreana*, and round the base were six small china vases. The end stands were very effective, the base of them being Water Lilies, which contrasted agreeably with the heavier shades of the base of the Marsh stand. No plants were employed. Six dishes of fruit and ten smaller glasses completed this excellent table. Mrs. Gallender, Grey Street, Newcastle, was second. She employed very choice flowers, the base of her stands being rather heavy, and the table altogether a little crowded. Mr. Methvin, gardener to T. Lange, Esq., Heathfield House, Gateshead, was an excellent third. Table plants were good, twelve lots being staged. Mr. Methvin was first with an even lot of *Geonoma gracilis*, *Ocrotia Lord Derby*, *Cocos Weddelliana*, *Aralia reticulata*, and *Pandanus Veitchii*. In one of the lots a plant of *Amaranthus Henderi* was shown finely coloured.

Epergnes and baskets of cut flowers were excellent both in the open and amateurs' classes. For the former Messrs. Rymer and Davidson took first; in the latter Mr. Huggill and Mr. Rymer. Hand and bridal bouquets were very good. Mr. Rutherford winning with his bridal bouquet—a chaste arrangement of *Stephanotis*, double *Jasminum*, *Gardenias*, *Rose Niphetos*, and slightly margined with *Adiantum gracillimum*. In this class eight bouquets were shown, and not a bad one amongst them. In the corresponding class for hand bouquets there were eleven examples equally good, Mrs. Ramshaw winning the premier prize.

CUT FLOWERS.—Dahlias were a strong feature, no less than ten twenty-fours were staged. Mr. Charles Rylance was first with fine large blooms, but not by any means coarse, as we have so frequently seen them this year. The best flowers were Clara, Alex. Cramond, The Countess, Flora Wyatt, Criterion, Royal Queen, Vice-President, John Laing, Empress Maud, Harry, Flag of Truce, Mrs. Shirley Hibberd, J. Neville Keynes, James Cocker, Louisa Neale, Constancy, G. Smith, and Aurora, all very fine. Mr. John Walker, Low Fell, Gateshead, and Mr. T. Painter, Smallwood, Cheshire, secured the remaining prizes. Mr. Walker's were fine but the blooms were rather small, the best being Louisa Neale, J. Cocker, Chris. Ridley (magnificent), Flora Wyatt, Countess of Pembroke, Vice-President, and Thomas Goodwin, a fine dark. For twelve Fancies, distinct, there were six lots. Mr. Rylance was again first with unusually fine blooms of *Summertime*, Mrs. Saunders, Charles Wyatt, Fanny Sturt, Singularity, Prospero, Hercules, Queen Mab, and Gaiety, a flower of 1879; Mr. W. Shaw and Mr. T. Painter following with very good stands. Mr. Carrick and Mr. Fletcher securing premier honours for twelves and six's in the corresponding amateurs' classes. Hollyhocks were also in the ascendant, as many as six stands of twenty-four blooms being staged. Mr. H. Clark, Bodley, Leeds, was first with fine fresh blooms. For twelve Hollyhocks Mr. Spoor, Swallow, was first. There were not many Roses, prizes only being offered for twelve blooms in six varieties. Messrs. Mack & Son, Catterick Bridge, were first with remarkably fresh blooms for the time of year of *Madame Sophia Dumaresque*, *Maréchal Niel*, *Paul Neyron*, *Maurice Bernardin*, *Alfred Colomb*, *Princess Beatrice*, *Velours Pourpre*, and *Queen of Waltham*; Mr. Burrell, Heighington, Darlington, was second. Both Feathered and Globe Asters were largely shown, and embraced some very choice flowers; also were Carnations and Picotees, Mr. Edward Adams, Swallow, receiving a first-class certificate for a seedling crimson Bizarre, a fine flower of good substance. Several noted exhibitors competed, including Messrs. Rudd, Bradford, Scott, Jeavons, &c. French and African Marigolds were fine, and shown in enormous quantities, especially the latter.

For eighteen Gladioli Mr. W. Spoor was first with extraordinary good spikes of *Ninon de l'Enclos*, *Christopher Colomb*, *Velleda*, *Adolphe Brongniart*; these were in his front row, and all had fifteen blooms well open. Then followed excellent spikes of *Horace Vernet*, *Addison*, *Orphée*, and *Giganteus*. Mr. George Charlton's second-prize stand contained excellent spikes, *Shakespeare* being fine and 4 inches across. There were six lots, and gave the hall a charming appearance. In the corresponding class for nine spikes, not less than six varieties, Mr. R. Harkness, Alledale, was first, his collection including a white seedling feathered with crimson, fine; *Belladonna*, grand, 4 inches across; *Eugene Scribe*, and *Penelope*. Fancies, cut blooms of *Zonal Pelargoniums*, some average *Fuchsias*, *Liliums*, and *Coleuses* completed this excellent exhibition.

Several collections of Tea Roses by Messrs. Mack & Son, Catterick, were sent for exhibition. A very large collection of Bronze and Tricolor *Pelargoniums*, embracing most of the recent novelties, was sent by Rev. C. P. Peach, also excellent herbaceous *Phloxes*. Mr. Witherspoon received an extra prize for a tastefully arranged basket of fruit. Mr. Dobbie, florist, Rothsay, also sent a capital stand of vegetables, together with a choice collection of herbaceous flowers. He was awarded an extra prize. Messrs. Lazenby and Wardle sent good blooms of *Verbenas* and *Carnations*. Mr. W. J. Watson, nurseryman, Fenham, contributed an excellent collection of choice hardy *Conifers* suitable for every purpose of balcony and town decoration. The charming *Cupressus alba* spica, attaining a silvery appearance during the summer months, was highly attractive, as was also the Golden *Cupressus Lawson-*

*iana lutea*. *Cupressus Nutkaensis* is perfectly hardy, and succeeds well in the neighbourhood of Newcastle. Of *Retinosporas* we noticed *R. plumosa aurea*, *R. squarrosa*, *R. pygmaea*, *R. lycopodioides*, &c.

The Committee are to be congratulated on the success of their large, varied, and fine Exhibition, and it is gratifying to state that their efforts are appreciated by the public.

I do not wish to be unnecessarily critical about the judgments at this fine Show, but I want to make a few remarks upon what with a few alterations would be a remarkably good schedule with noble prizes. First, £22 was given for dinner-table decorations, divided into £10, £6, £3, £2, £1—i.e., five prizes, but not one of the tables could strictly be called a dinner table—all merely dessert tables, and not one table, except one which had no prize was in any degree such as would be seen in noblemen's or gentlemen's houses in these present days. I suggest to the Committee, that instead of giving such large prizes merely to dessert tables with incongruous glass and fripperies of all sorts, they should divide the money for the future into dinner tables and dessert tables. The schedule runs, "The most tastefully decorated 'dinner' table;" each competitor allowed 10 feet by 5 feet 4 inches, and to provide a white tablecloth. So, too, I suggest that at a large show it is a mistake not to make all cut blooms dissimilar in their different classes. In Classes 10 and 11 Dahlias were distinct, but Class 12 runs, "Twenty-four Hollyhocks, not less than twelve varieties." Class 18, twelve Roses not less than six varieties. Class 16, twelve Carnations, not less than six varieties. 17 is right, six Belts or Cloves, distinct; but other classes were open to improvement. In Class 21, twenty-four Pansies, not less than twelve varieties. Show Pansies and Belgian fancies were mixed together; and by far the two most beautiful lots of Pansies in the Show, one shown by myself, another by another exhibitor, had no prize awarded, but were cut out by the usual formal and dull (in my eyes) collection of the old show sorts, which I should never care to grow. No. 28 was right, twelve bunches or trusses or blooms, cut flowers, distinct from stove and greenhouse. The Gladioli in the second-prize collection were the finest in point of foliage and development of any I had ever seen, and I should certainly have placed them first; yet on the whole the judging of the cut flowers was remarkably correct. So, too, was the fruit-judging, with one or two exceptions, notably in the eight varieties of forced fruits, Mr. Westcott's second-prize collection being undoubtedly the best.

These remarks hitherto apply to Class A, open to all nurserymen and gentlemen's gardeners. The same remarks apply to cut flowers, also in Class B. Of the Hollyhocks in the winning collection I counted no less than eight blooms which had come off the same Hollyhock, or rather plants of the same kind; and though in order to see whether the judgments were good one of the Committee in the evening, after ten, when the Show was over, turned down all the cards and asked me to judge them, I only made one alteration in all the decisions, yet I am obliged to confess there was a terrible amount of sameness in these Hollyhocks, &c., and other parts of the schedule not limited to distinct varieties.

In the matter of the fruits—and I certainly have never seen a better collection of fruit, especially Grapes and Peaches—it was different; every variety had to be distinct. But even here again was, to my mind, a great blot—large prizes given for forced fruits, and also for so-called hardy fruits; but on carefully examining the so-called hardy fruits I am certain not one was grown in the open air. Unless southern exhibitors had sent fruit from Jersey all had come from orchard houses. I make these remarks because I would suggest to the Committee another time to have classes for orchard house fruit and for fruit distinctly hardy, the exhibitors signing a declaration to that effect—that the fruit was not grown under glass or imported from sunnier climes. I mention this because I took, merely as an extra addition to the Show, forty varieties of Apples, twenty-five of Pears, and twenty of Plums—all grown either as bush, espalier, or in some few cases as wall fruit—out of my garden in Yorkshire.

If only an alteration was made in the directions I have hinted at, or perhaps I might say more than hinted at, I am certain that this Show, which is already one of the finest in England, would be much improved. I ventured to say the same at the dinner when called upon to return thanks for the exhibitors, and I believe most of those present agreed with me.—C. P. PEACH.

#### BEDDING PELARGONIUMS.

THE general practice of planting *Pelargoniums* in bedding-out so close as to make one uniform mass when they have advanced in growth has disadvantages which are especially obvious in such seasons as the present. The flowers as well as the foliage of plants treated thus are too flimsy to withstand continued rain, even in good seasons such as that of 1878. Having in that year a few *Pelargoniums* over after planting the beds intended to be so filled, I planted them in another

far enough apart for their full development without touching, and after the middle of the season they compared so favourably with the others, which had by this time grown into a mass, holding their flowers in the heaviest rain, while those on the others were beaten to pieces and showing every leaf fresh and green, when the lower leaves of those planted in the usual manner were turning yellow and rotting, that I determined to plant all my Pelargoniums that way in future. Managed thus they bear looking at individually, the plant alone being ornamental, independent of bloom; whereas, when planted as thickly as they generally are, a glance at the general hue of the bed is all they deserve and get. But, besides, there is positively more bloom on a bed of the thinly-planted in wet weather, more brilliant colour to be seen, than on a thickly planted one. Of course, for this plan of filling the beds good plants must be put out in the first instance, which can be easily afforded, as about half the usual number will do.—A. BOYLE.

#### GRAPES WITHOUT FIRE HEAT.

"A. C. M." seems anxious to know if Mr. Muir's Black Hamburg Grapes were grown and ripened entirely without fire heat. This I do not know, but Mr. Muir will most likely reply to him; but let me state that we have a house of Black Hamburgs that have had no fire heat whatever, and the Grapes are nearly all ripe and of good colour and fine bloom. I have cut about eight bunches of fine fruit. Some of the bunches are not all colouring very well, which is, I think, owing to so much wet and cold. The Vines are planted outside, and have no inside border.

I can readily believe "A. C. M.'s" statement about the vineries in the south of London with no heating apparatus. With the late cold spring the Vines have been late in starting; but here the house I have referred to was full of greenhouse plants all the winter, and a temperature of 40° to 45° was maintained by hot-water pipes, but the Grapes certainly have had no fire heat beyond that, and that was discontinued as soon as the danger from frost was gone.

The Grapes in my early vinery—which is glazed with thick plate glass, and of which I gave some account in the *Journal* last spring—did not colour well, and this I believe was in a great measure the fault of the thick glass, with so little sunshine as we had in early summer.—G. HILTON, *Great Totham, Essex*.

I AM much obliged to Mr. Muir for his reply, on page 229, to my letter that appeared in a previous issue of the *Journal*. I should not have entered further into the subject had not your correspondent specially requested me to state "how much importance I attach to starting the Vines with fire heat in April, and if I consider Grapes so assisted are ripened with the aid of fire heat." My reply is, that the little fire heat applied at the time of starting the Vines makes all the difference between having ripe and unripe Grapes in a season like the present, on August 20th, the day on which Mr. Muir exhibited Grapes "ripened without fire heat" at the Glamorganshire Show. I have excellent proof of this, for in a house devoted to preserving plants in winter and growing them in spring, and where a little heat was applied throughout April, but none whatever after the 1st of May, Grapes were cut on September 5th, while in an adjoining house, in which no provision is made for heating, the Grapes are not yet ripe, though the utmost advantage has been taken of sun heat in both cases. Mr. Muir will admit the disappointment of the owner, and also the prospective loss, when he is told that it is doubtful if five hundred bunches will ripen at all. Last year, and in previous years, they ripened, but were not always quite so fine nor so good in quality as those in the house from which frost was excluded in winter, and a genial temperature was maintained in early spring.

The natural deduction following Mr. Muir's statement, had it been unexplained, is that provision for artificial heat, even during a season like this, is a superfluity when Grapes are not wanted before August 20th; but I think, and I do not write without reasonable grounds for my opinion, that it is wise to make some provision for fire heat in case it should be required, and the better quality of the Grapes will more than defray the cost of the heating apparatus. I have seen Grapes in several unheated houses this year, but not in one instance have I seen them ripe in August; and if there is a case in Great Britain where they have ripened on the 20th of that month, and no fire heat whatever has been applied to the house at any time,

it will be worth recording, as it will prove there is at least one spot in the country where the weather has been salubrious during this extremely inclement season.—A. C. M.

#### WELSHPOOL HORTICULTURAL SOCIETY'S SHOW.

THIS was held in two large tents on the bowling green. A fine collection of plants not for competition was sent from the Powis Castle Gardens, kindly lent for the occasion by the President of the Society, Lord Powis, including remarkably well-grown examples of *Lapageria rosea*, Orchids, Palms, and various stove and greenhouse plants; also a collection of fruit containing Grapes, Pine Apples, Peaches and Nectarines very fine, Cherries, Pears, Plums, Currants, &c. J. C. Naylor, Esq., Leighton Hall, also sent an excellent and varied collection of plants. Mr. J. Jones, nurseryman, Shrewsbury, in a small tent adjoining staged sixty spikes of very fine Gladioli, a box of herbaceous Phloxes in good condition, Asters, bouquets, plants and Ferns, and a collection of Dutch bulbs. Among his Gladioli the most noteworthy were Admiral Willis, a red flaked and shaded crimson, a fine flower; Egyptian King, maroon shaded and flaked mahogany; Kate, a soft pink flaked with deeper pink, very large flower and spike; Cluvia, salmon rose; Mrs. Mytton, red inside petals lighted with white, a very fine flower; Lord Berwick, orange scarlet, white throat; Mrs. Stanley Leighton, rose tinged orange, a lovely flower; Mrs. Wingfield, rose blazed carmine.

Among the plants for competition Mrs. Curling, Mrs. Willis Johnson, G. D. Harrison, Esq., Wm. Morris Pugh, Esq., D. H. Mytton, Esq., Mrs. Troughton, and Mrs. Lilwell were the chief prizetakers. The *Caladiums* from Mrs. Curling were particularly fine, as also were her Golden Hamburg Grapes, for which was awarded the first prize. The first-prize Black Hamburgs were shown by Mr. A. Davies, and were remarkable for colour and fine berries, especially so as they were only grown in a house without the aid of artificial heat, but the bunches were small. The cut flowers were not numerous nor good. Fruit and vegetables were very good indeed, and many were surprised to see such fine fruit in so bad a season.

The cottagers' exhibits were displayed on tables in the open air, and a finer collection of fruit and vegetables it would have been impossible to imagine. Celery was splendid, and Potatoes were very numerous and excellent.

#### THE LONDON PARKS.

##### FINSBURY PARK.

NORTH of the metropolis, situated between Highgate and Stamford Hill, is a tract of elevated and pleasantly undulating land (comprising nearly 120 acres) that was a few years past acquired by the Board of Works, and converted into a public park of considerable beauty. It slopes abruptly to the north, and the highest portion commands an extensive and agreeable prospect in clear weather, which, judging by the number of comfortable seats most thoughtfully placed there, must be greatly appreciated by the visitors. The Park is traversed by numerous excellent walks, some of which are formed of an asphaltic composition of tar, marble chipping, and shells, that is well adapted for the steeply sloping ground where gravel would be partially washed away by the rain; and although the colour is somewhat against it, yet it is always dry, firm, and clean. The shrubberies are at present in a comparatively young state, yet notwithstanding their exposed position they are thriving admirably. Near the refreshment room is a small lake well stocked with waterfowl, and in the centre is a picturesque little island. There is also an extensive open tract of well-kept turf that is devoted to cricket and similar sports.

Flower gardening is well represented, and the effects of this unfavourable season were scarcely apparent; the majority of the Pelargoniums were flowering as profusely as could be desired, and the general vigour of the plants was remarkable. Their excellency in this respect is partially attributed by the competent Superintendent, Mr. Cochrane, to the purity of the air at that elevation and distance from the smoke of the City. The principal beds are in two opposite semi-elliptical turfed spaces, separated by a walk and backed with borders of low shrubs; the beds on one side of the path are generally similar to those on the opposite side, except that some of the central Pelargoniums are different. Next the shrubs are three large circles planted with *Cannas*, *Abutilons*, and Pelargoniums, with an edge of *Lobelia White Brilliant* and *Echeverias*. In front of them are several rows of variously formed beds, crescent-shaped, oblong, and polygonal, mostly planted with Pelargoniums in the centre, with an edge of Pelargonium *Princess Alexandra* and *Lobelia pumila magnifica*, the front row being occupied with tricolor and bronze

foliated Pelargoniums, such as Lady Oullum and Marshal MacMahon. Two crescent-shaped beds with centres of *Centaurea ragusina* and *Verbena venosa* mixed, edged with *Iresine Lindeni* and *Lobelia Omen*, were extremely pretty. Some of the most noticeable varieties of Pelargoniums were *Theocritus*, a fine flowering scarlet, very effective; *Cleopatra*, an excellent pink, with large flowers of good substance; *Edward Sutton*, good dark scarlet; and *Mont Rouge*, very floriferous, medium sized truss of bright scarlet flowers. Immediately in front of the shrubs was a pretty ribbon border planted with scarlet and pink Pelargoniums margined with *Lobelia pumila magnifica*; the latter appears to have succeeded well this season, the colour is a fine bright blue, and the flowers most abundant.

In other portions of the Park were several tasteful beds, especially one of *Fuchsia Sunray* interspersed with *Viola Admiration*, and margined with *Pyrethrum*. Near the principal gate was a large scroll bed planted in a bright and graceful carpet design with *Mentha Pulegium gibraltarica*, *Alternanthera*, *Pyrethrum*, &c. Very attractive in the open turf portions were the circles of *Saponaria calabrica*, *Tagetes signata pumila*, and *Convolvulus minor* beneath the numerous Hawthorns, and the bright pink of the *Saponaria* was especially pleasing in contrast with the green turf. Some small beds of *Tropeolum Minnie Warner*, a form with fancy variegated foliage, was also noticeable; and the ordinary styles of planting were relieved and varied by several herbaceous and mixed borders of *Alströméria*, *Phlox*, *Stocks*, *Centaureas*, *Lupina*, and *Spiræa filipendula*.

The neat and bright appearance of the Park generally is sufficient evidence of the care and attention bestowed upon it by Mr. Cochrane, who has had the management since it was first opened to the public; he is ably assisted in the flower garden by his thoroughly practical foreman. In the houses attached about 100,000 bedding plants are propagated annually, a portion of which are employed in decorating the gardens of the Thames Embankment. We have described this Park at some length, as it is the first time a notice of it has appeared in the *Journal of Horticulture*.—L. C.

### THE FUCHSIA AND ITS CULTIVATION.

[Read before the Sheffield Gardeners' Association by Mr. Thomas Foggin.]

THE *Fuchsia* is beyond question one of the most graceful, showy, and useful of our flowering shrubs in the possession of the gardener or cottager, and certainly there is no other flower, with perhaps the single exception of the *Geranium*, for the loss of which it would be more difficult to find a satisfactory substitute. In the ease and facilities it affords for propagation it is absolutely without a rival among hardwooded or semi-hardwooded plants. The ease with which it is propagated, the beauty of its foliage, the abundance, gracefulness, and diversity of its flowers, its adaptation to the requirements of the window of the cottager, the conservatory of the rich, and the borders of gardens in town and country, have contributed in no small degree to secure for it the enviable position of everybody's plant. The value of the *Fuchsia* for outdoor cultivation is not so thoroughly appreciated as it deserves. This in a great measure arises from the mistaken impression that the fine hybrid varieties now in cultivation are too delicate in constitution to flourish in the open ground, though to some extent it may be the result of the modern practice so much in vogue of massing large quantities of a particular colour in the same bed or in the ribbon border. In the majority of cases where *Fuchsias* are used for decorating borders, or intermixing with other shrubs in the front rows of shrubberies, the old and by far less showy sorts are generally in request, owing to their supposed greater hardiness. Gardeners can scarcely fall into a greater error, or one which a single trial would more completely correct. Both double and single varieties are now cultivated to such an extent that it would be superfluous to attempt to make a selection, as every grower will be able to do that for himself.

I will now describe the method of cultivation which I have for many years adopted, and which has always proved successful. But as my remarks are directed to those who are already conversant with the practical operations of gardening, I do not propose to enter into such minute details as would be necessary if I were speaking to amateurs or other non-professional admirers of this beautiful class of plants. Young cuttings may be struck with certainty at any season of the year. I have, however, found cuttings rooted from January to March the most useful when specimen plants are required, because at that time

they may be grown on without allowing them to receive a check, a consideration which is of the utmost importance where the object to be attained is a large and symmetrical specimen. The cuttings require good sharp sand, and a gentle, regular, and moist bottom heat. Under these conditions they will throw out roots in a few days. As soon as the roots are formed the young plants should be potted off into thumb pots, and in performing this operation great care is required to avoid injuring the roots which at this stage are very tender. The soil I have found best is composed of equal parts of loam and sand with a small portion of well-decomposed leaf mould. The young plants should be kept growing in a temperature not exceeding 60° at night, but may be increased to 65° in the daytime with great advantage. If bottom heat can be commanded, and the pots plunged in it, the growth of the plants will be very considerably facilitated. Assisted in this way the roots will soon reach the sides of the pot, when the plants should have a shift without unnecessary delay. The object of the cultivator should be to repot frequently, but on no account to give more pot room than is absolutely required. Great care should be taken to prevent the plants from becoming pot-bound, as this would very seriously interfere with their free and vigorous development. These remarks apply with equal force to plants in all stages of growth, and unless special regard be paid to them all the efforts of the gardener will be thrown away, and disappointment will be the inevitable result. The final shift should be given at least three months before the plants are wanted to bloom, and for this purpose equal parts of loam and old decayed manure form the best compost. The quicker the *Fuchsia* is grown the better it will break, which should be from the axil of every leaf, and the more symmetrical will be the shape of the plant. Avoid shading as much as possible, indeed the plants should never be shaded with the exception of a few days after each potting. Throughout the whole period of growth apply the syringe freely and often, and on no account permit the plants to suffer by want of water, which checks their growth so much that no future attention can possibly remedy the mischief.

One of the main objects in preparing plants for exhibition is to get them in good form, and unless this desideratum be satisfactorily accomplished success cannot be attained, no matter how good the plant may be in other respects. To secure this object much necessarily depends upon the taste and judgment of the operator, who must be guided in large measure by the peculiarities common to each variety under his care. In pursuing this end do not be afraid to take out the points of such young shoots that would interfere with the regular proportions of the plant, and which, by breaking back, would assist in promoting a uniform and beautiful specimen. Neglect of these timely precautions is probably the cause of many of those failures which so frequently annoy and dishearten the practical cultivator. That he has many and unanswerable reasons for his failure I willingly admit, but his reasons cannot be taken into consideration by the judges at horticultural exhibitions.

If the plants do not appear to your satisfaction about two months before they are required for exhibition, and the blooms do not appear as though they would come out in time, give the plants a little stimulant; but in order to avoid exciting them into a rank and useless growth commence with a weak solution, and increase its strength gradually as you see they can take it. If you perceive it is too strong withhold it for a few days, and then renew it in a weaker form. You will soon be able to judge on this point, for immediately the direct rays of the sun play upon the plant the foliage will begin to droop, thus affording a sure sign that the plant has been excited beyond its natural and healthy condition. The cellular tissues do not in such cases contain the necessary amount of woody fibre, and the plants consequently cannot be expected to flower profusely. As a stimulant I have found nothing to equal blood, mixed in the proportion of half a pint to a gallon of water. There is nothing which will bring out such bright and healthy foliage, which is one of the chief additions to a plant in flower. An increase in the quantity may sometimes be made with advantage, but the use of such means must be applied with discretion and moderation. While on the one hand there is nothing which adds so much to the appearance of a plant as healthy foliage, there is nothing which detracts more from its beauty than bad foliage. The length of time required from the last pinching of the shoots to having the plants in full flower is about six weeks with most sorts, but this depends in a large degree upon the means and attention given by the

cultivator. The most effectual means of procuring good specimen plants is, after all, that the gardener should rise early and watch them late, in order to procure the finest specimens. Without such care all other means and appliances are of no avail.

#### NOTES AND GLEANINGS.

THE annual meeting of the PELARGONIUM SOCIETY was held at Chiswick on Tuesday last. There was a large attendance of members. Dr. Denny in the chair. The report and balance sheet for 1879 were submitted and adopted; Mr. Douglas was added to the Committee for the ensuing season. A discussion arose respecting a code of rules by which Pelargoniums should be judged, and the subject was referred to the Committee. W. B. Kellock, Esq., presided at the luncheon. Votes of thanks were unanimously accorded to the Royal Horticultural Society for the facilities afforded the Pelargonium Society; to Dr. Denny (Treasurer), Mr. Moore (Secretary), Mr. McIntosh (Chairman), and Mr. Turner, Slough. The excessive rain prevented the members from doing much work in the gardens, but a pleasant afternoon was spent by the company.

AT the NEWCASTLE SHOW, a report of which appears in another column, a case of theft occurred which the Committee, for the protection of exhibitors sending fruit to their Shows, subjected to magisterial decision. A gardener named Forster was seen to purloin an Apricot, and on being searched fourteen specimens of fruit were found on him. Evidence of the fact having been given by Mr. Gillespie the Secretary, the solicitor engaged for the defence, while justifying the Committee for the steps they had taken, submitted that the fruit had been pocketed under the foolish supposition entertained by some people that the fruit at the close of a show could be taken by the visitors. In consideration of the man's previous good character, and as the fact had been made public, the Committee, with the permission of the Bench, withdrew the charge. The Magistrate in dismissing Forster observed that if the Committee had not taken a lenient view of the case it would have been very serious for him.

It is a little surprising that the TURNIP-ROOTED BEET is not more generally grown in gardens for yielding early produce. We some time ago had some of this sent to us by Mr. Iggulden, and we never tasted Beet of better quality, while the colour was all that could be desired. The produce was much superior to that of the ordinary Beet that had been grown last year. In all gardens where sweet juicy Beet is required as soon as possible a few rows of this variety should be grown, as it is the earliest of all and as good in quality as any.

MR. WARE, in his descriptive notes on hardy perennials and alpine plants, refers as follows to *PRIMULA ROSEA*:—"This is, without a doubt, one of the most beautiful Primroses in cultivation. It is totally distinct from anything known, and a first-class effective plant either for pots, the rockery, or the front row of the herbaceous border. It has a vigorous habit, grows with an amazing rapidity in any ordinary soil, is quite hardy (having stood out the whole of the past winter), and is exceedingly free-flowering; in fact, possesses every qualification to render it a favourite with the million. It was awarded a first-class certificate at South Kensington, and was the admiration of everyone. The King of the Belgians greatly admired it, and ordered a quantity of it for his palace at Laeken. The flowers are in large umbels and of a bright rose colour; small plants producing three or four heads on each."

WE have received a photograph of a FRAME GLAZED on the system of Mr. Thomas Bickley of Birmingham, in which the sashbars (lead or metal), are placed crosswise of the light, and the glass is kept in position by lead clips instead of putty. It represents an excellent system of glazing without putty, and the houses we have seen glazed on this principle were light in appearance, waterproof, and durable. Only the bars are patented, and can be applied to structures of various forms.

WE regret to have to announce the DEATH of MR. W. WILSON SAUNDERS, F.R.S., late of Hillfield, Reigate, which took place at Worthing on the 13th inst., in the seventieth year of his age. Mr. Saunders was long favourably known as an assiduous naturalist, and patron of science generally. The pursuits which he more especially cultivated were botany, horticulture, and entomology, and he was for many years an

active member of those societies which give encouragement to these pursuits. Mr. Saunders was for many years an active member of the Council of the Linnæan and Royal Horticultural Societies, of the former of which he was Treasurer, and of the latter Secretary. A few years before his death he issued the "Refugium Botanicum," an illustrated work, giving portraits of some of the most interesting and neglected of cultivated plants; and he was also author of occasional papers on the Transactions of the various societies to which he belonged. Mr. Saunders was a man universally beloved by all who had the privilege of his acquaintance, and his loss will be deplored by a very large circle.

THE GARDENS IN ST. PAUL'S CHURCHYARD, to which we alluded some time ago as being in progress, were opened on Monday last by the Lord Mayor. Their area is small, but the most has been made of the ground, and a great improvement has been effected by the introduction of grass, shrubs, and trees at the base of the noble building. The surface is pleasantly undulated, and is traversed by wide and firm winding paths that are composed of an asphaltic composition well calculated to stand considerable traffic. The beds containing the shrubs are slightly raised, and the latter chiefly comprise Aucubas, Hollies, Skimmias, Euonymuses, and Rhododendrons. The general effect is most agreeable.

IN the remarkably neat and well-kept grounds of the Royal Pavilion, Brighton, is a pleasing instance of CARPET BEDDING. A long scroll-like bed, composed chiefly of *Mesembryanthemum cordifolium variegatum*, has a design in *Mentha Pulegium gibraltarica*, somewhat resembling a branch that successively gives off large elliptical leaves; between the latter are small circles of *Alternanthera amena* and *A. versicolor*, which are very bright in colour, and contrast well with the *Mesembryanthemum*.

A CORRESPONDENT, "J. W.," sends us two trusses of *HYDRANGEA* both cut from one shrub; the one is pink and the other blue. There are at present many trusses of flowers open and others not so forward, some blue and the others pink. They are cut from a bush on the highest land in Kent.

A CHESHIRE correspondent justly observes that "*HOYA CARNOSA* is one of the best of autumn-flowering greenhouse or conservatory climbers. A plant with us growing up the wall side of a conservatory about 30 feet high is densely covered with its pretty clusters of flowers. Being clean of mealy bug no plant is easier managed; indeed, it grows itself, and has but little training now that it has once covered the wall. As regards the root the same simplicity may be observed. The border is not above a foot in width and the same in depth, but has thorough drainage. This plant seems to flower better under the natural influence of light than when shaded, with not too much water at roots. Nicely mounted this is a very handsome coat flower."

MR. JOHN GREEN, who has been foreman in the gardens of R. Hanbury, Esq., Poles, Ware, has been appointed head gardener at Sir T. F. Buxton's, Warlies Park, Waltham Abbey. Mr. ALEXANDER KIRK, Ernespie Gardens, has been appointed gardener to J. Thomson Paton, Esq., Norwood, Alloa, Clackmannanshire.

#### DESFONTAINIA SPINOSA.

SINCE Mr. Luckhurst communicated his experience relative to the hardness of this distinct and beautiful shrub we have had many inquiries respecting it. These will be best answered by the publication of the antitext engraving, which well portrays the appearance of the shrub; and its full beauty will be appreciated when it is remembered that the flowers are rich scarlet in colour tipped with yellow, and the foliage dark glossy green. It was introduced several years ago by Messrs. Veitch, and has usually been grown in greenhouses, but now that its hardness has been proved in the southern counties it will probably be more extensively planted in sheltered nooks and well-selected and prepared positions in shrubbery borders.

Our great want in the shrubbery is shrubs which flower in summer and autumn. We have a few, and only a few, and to these *Desfontainia* is a valuable addition. It is an evergreen; the dark green foliage, bearing a close resemblance to that of the common Holly, is thickly set upon a rigid, erect, bushy growth. The flowers come early in August, and continue in full beauty for upwards of a month, in clusters of long pendant tubes upon the ends of the branches. It answers well in ordinary garden soil, but should have an elevated well-drained



position, sheltered yet open, and is quite worthy of a special station of deep rich soil.

Though not generally met with it is common in the gardens of Cornwall and Devonshire, where it attains a height of from

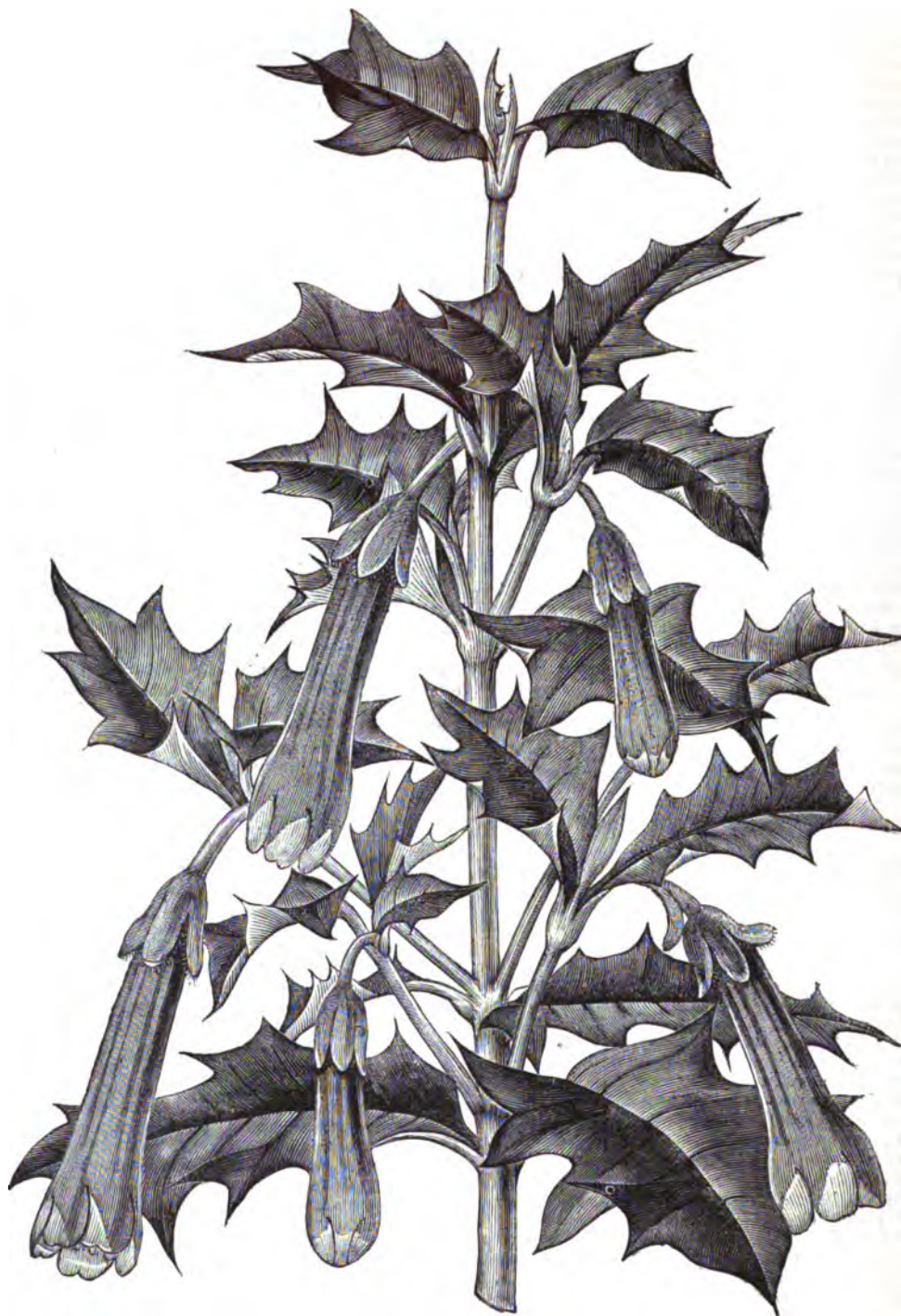


Fig. 28.—*DESFONTAINIA SPINOSA*.

5 to 6 feet, which would seem to be its maximum in this country, several of the largest specimens showing traces of incipient decay. Hitherto it appears to have been regarded

more as a botanical curiosity than an ornamental shrub, hardly any garden containing more than a solitary specimen, the only remarkable exception we have met with being a fine bed of it



in the garden of Mr. George Williams at Scorrier, in the heart of the Cornish mining district, and yet it has been under cultivation in this country for nearly thirty years.

## ACANTHACEOUS PLANTS FOR WINTER

### FLOWERING.—No. 3.

#### STEMONACANTHUS.

THIS genus contains but few species. It is characterised by the five-cleft calyx, by the corolla tube being slightly curved and somewhat club-shaped, whilst the lobes of the limb are unequal and usually reflexed; the capsule four to eight-seeded. The species are all tropical American; they are free-growing, and produce the finest effect when one year old if properly managed. But although so showy and effective when well looked after, they present a deplorable sight when neglected, and that so little attention as a rule is bestowed upon these plants has been one of the principal means of bringing them into disrepute. Pot in leaf soil, peat, loam, and sand in equal parts, and drain well. They may be grown in a cooler part of the house than the members of the order from West Africa.

*S. Pearcei*.—An erect-growing plant with four-angled stems and opposite leaves, which are lanceolate, acuminate, slightly toothed at the edges, some 6 inches long, deep green above, and dull purple on the lower surface. Flowers axillary towards the ends of the shoots, forming a somewhat loose panicle; they are erect, slender at the base, swelling upwards, with a spreading limb some 2½ inches long, and bright scarlet. It blooms usually about February, and continues to give a succession of its brilliant flowers for nearly two months. Native of Bolivia.

*S. macrophyllus*.—This species is an older acquaintance than the one previously named. It differs principally in being a less robust grower, in the leaves being ovate-acuminate, and entirely lacking the purple colour on the under side. The flowers are scarlet but scarcely so large, and the inflorescence altogether is much more lax. Notwithstanding, it is a very desirable and handsome plant, usually flowering earlier than *S. Pearcei*, and thus serving to keep up a succession of bloom. Native of New Grenada.

#### THYRSACANTHUS.

All the species of this genus hitherto introduced to cultivation are well deserving the attention of plant-growers; several, however, being summer-flowering species, cannot be introduced here. We should advise the species quoted to be cut back annually and grown for some three or four years, when it will be best to substitute young plants. For soil, use good leaf mould, loam, fibrous peat, well decomposed manure and sand in about equal parts.

*T. Schomburgkianus*.—This plant was first distributed by the Belgian nurserymen by the name given by Planchon, *T. rutilans*, and by this name it is perhaps better known in English gardens to this day. The plant attains a height of some 2 or 3 feet, producing numerous branches. Leaves large, sessile, broadly lanceolate, tapering to a point, deep green above, paler below. Racemes 1 to 2 feet long, drooping and branched. Flowers tubular, upwards of 2 inches long, deep crimson in colour. It is at once one of the most desirable and effective plants it is possible to recommend, and in addition it is not only a winter bloomer, but could if required be kept blooming nearly the whole season. It seems to be widely distributed in South America. First introduced from British Guiana, afterwards from New Grenada.

*T. indicus*.—A shrubby plant of considerable beauty, but totally different both in habit and colour of flowers to the previous species. The leaves are opposite, oblong-lanceolate in shape, tapering to a point some 3 inches long, and very deep green in colour; thyrsus terminal, but instead of drooping as in *T. Schomburgkianus* it is erect, many-flowered. Flowers large, funnel-shaped; colour white, more or less streaked with lines of purple. It blooms during the months of February, March, and April. Native of Northern India.

#### WHITFIELDIA.

This genus is nearly allied to *Barleria*; it differs, however, particularly in having two peculiar bracts at the base of the calyx, both bracts and calyx being of a dull red hue. The species here introduced for its winter-flowering qualities may be grown into handsome plants in one season, therefore we should not advise old plants to be kept till the second year.

*W. lateritia*.—A shrubby branching plant, producing opposite

lanceolate leaves, which are furnished with long petioles about 2 inches long and deep green. Flowers produced on terminal spikes some 3 to 6 inches long, funnel-shaped, and deep red. It blooms during December and January. Native of Sierra Leone.

#### BARLERIA.

This is a large genus containing many very fine species which unfortunately have not yet been introduced in a living state. They are distributed over the tropical portions of both hemispheres, nearly fifty species being known as African, whilst the peninsula of Hindostan is very rich in members of this genus. They thrive best in good light soil, and as their growth is rapid we should certainly prefer young plants every year.

*B. Gibsoni* (fig. 29).—A neat branching shrub, attaining a height of several feet; but handsome well-furnished plants



Fig. 29.—*Barleria Gibsoni*.

some 2 or more feet high may be grown from cuttings in a single season; and as these not only bloom freer than old plants, but produce the finest flowers, there is no advantage in keeping the old ones. The leaves are upwards of 3 inches long, ovate-lanceolate and acuminate, deep green above, glaucous below, and somewhat coriaceous in texture. Flowers funnel-shaped, produced in terminal and axillary spikes near the ends of the branches; lobes spreading, colour pale purple, the two upper lobes having a dark purple blotch in the centre. It flowers in midwinter. Native of Central India.

*B. Mackenzii*.—A species closely allied to the preceding, but a native of Africa and not India, having been introduced from Natal, a portion of the world to which the public attention has been so earnestly directed during the past two months. It is a very ornamental plant, attaining the proportions of a small shrub. Stem slightly but very obtusely four-angled. Leaves somewhat ovate and subacute, recurved, about 3 inches long

and nearly an inch broad; colour deep green, and clothed on the upper surface with small close hairs, as also is the stem. Flowers not so freely produced as in the preceding species, but very handsome, funnel-shaped; the limb flat, some 2 inches or more in diameter; colour rich purple, with an intense deep purple blotch on each lobe. It flowers during early spring.

### THE INTERNATIONAL POTATO SHOW.

JUDGING from the number of visitors attending the Show on the second day it is evident that Potato exhibitions enjoy a fair share of popularity. That they yield pleasure to many who inspect them, gratification to those who promote them, and increase the trade in new varieties of Potatoes of imposing appearance, whatever their quality may be, may be taken for granted, but it is questionable if they do more. The majority of the varieties grown for exhibition are not of superior quality when cooked. They are grown to be looked at, not to be eaten. The cultivation of those varieties can only be regarded as a luxury. And why should not such a luxury be indulged in? The kitchen garden to the Potato fancier is a source of enjoyment as great as the flower garden is to the florist; but as to improving the Potato as an article of food and ensuring a better supply in the markets the "International" has done little or nothing so far, and it may be well, perhaps, not to expect too much in this respect in the future. The Exhibition held last week, if not the largest, was, notwithstanding the inclemency of the season, probably the best that has ever been held by the Society. The tubers were more regular in size than at any previous show, and the polishing that formerly gave to many of them such an unnatural appearance appears at last to be abolished.

The finest-looking kidney Potato in the Show was International, followed closely by McKinlay's Pride. Beckenham Beauty is also a handsome tapering tuber, and Covent Garden Perfection is fine. Snowflake, flattish kidney, was admirably represented; this with such varieties as the old Ashleaf, Veitch's Improved Ashleaf, and the Royal Ashleaf (all of which were very fine) combine attractiveness with high quality. Sutton's Magnum Bonum was in great force, and has won the position of being the greatest disease-resister of the year. Woodstock Kidney and Alpha (flattish) were attractive, as was also Edgcott Seedling. The finest round white variety was Schoolmaster; it is good also in quality in many soils. Porter's Excelsior followed closely. Woodstock round, selected perhaps from Woodstock Kidney, was pleasing in appearance, as was the new pebble-shaped variety Shelburne. Avalanche is also a pretty pebble-shaped variety, and Cosmopolitan a fine oval white. Bresse's Peerless was in fine condition. Amongst the mottled rounds Blanchard heads the list; Radstock Red closely resembles it, and Lye's Favourite is an excellently formed tuber. Gramplan, red round, and Trophy, red kidney, are amongst the best in their sections. The new Vicar of Laleham is distinct in colour, very dark; as also is Early Purple Kidney. Beauty of Hebron is a very pale red and of good size.

All the prize collections were excellent, notably Mr. McKinlay's, grown with the aid of Amies' manure, and there were several collections and dishes of great merit not included in the prize list. The judging was generally very good, and the Show, that could only be briefly noticed last week, was a successful one.

### THE OLD MARKET GARDENS AND NURSERIES OF LONDON.—No. 26.

IN our treatment of the above subject it is natural, when referring to various localities, to make at least a passing mention of nurseries and market gardens which are of repute, though they may be of modern date. By inadvertence only have some of these been omitted, and I regret that in referring to Camberwell and places adjacent in a previous article I did not name the establishment of Messrs. F. & A. Smith at West Dulwich. A considerable portion of eight acres is covered with glass, and the firm has attained notoriety for its Pelargoniums, double Primulas, Cinerarias, Carnations, Azaleas, &c. Large quantities of Balsams, Cinerarias, Cyclamens, and other species are also raised for producing seed only. One house there, 200 feet in length, which has been sometimes filled with show Pelargoniums, is under such circumstances a sight not to be forgotten. This nursery has been in existence about thirty years. It can no longer be said of Dulwich that we may "lose the world amid its sylvan wilds;" but it has still much open ground in its vicinity. But it is singular to remember how large a part of Surrey lying within view of St. Paul's was field and wood when Queen Victoria came to the throne. The Crystal Palace has stimulated building operations thereabout, but as it has undoubtedly served to encourage horticulture I for one should regret to see it removed and its splendid grounds cut up.

In dismissing south London from further notice I would also add to the old nurseries that have been specified already that of Messrs. Rolleston of Tooting, some account of which has been given in this Journal, and which is very nearly a century old; it is to be hoped that having had its period of depression it will again flourish. At Forest Hill are to be found the later nurseries of Messrs. John Laing & Co., familiar by name to many readers, as is the nursery of Messrs. Peed & Sons of Lower Streatham, with others that need not be particularised. Few, if any, of our Surrey nurseries can date back their origin to the seventeenth century; but amongst those that have vanished London mentions one in the hands of Mr. Russell at Lewisham which existed in Gibson's time, that is, early in the reign of William III. Lambeth has been previously described as once the abode of some of the early cultivators of exotics. The name of Parkinson was omitted; he was probably a friend of Tradestant, and seems to have been famous for Myrtles, Oleanders, and various evergreens. Let it be noted, by the way, that "greens" in some books on gardening belonging to the seventeenth and eighteenth centuries does not mean Cabbages but evergreens! Then there was known to Gibson a Captain Foster of Lambeth, who though he did not keep what was then called a "sale garden," appears to have sold or exchanged the plants he reared. Gibson, when he visited that gentleman's garden, was informed that he had been successful in propagating Hollies by grafting, and he was shown a walk covered with trelliswork upon which were trained Vines which some years produced "much wine." At present, if Grapes do ripen in Lambeth, as may be the case, wine-making is not carried on there from home-grown fruit. Worthy Mr. Gibson, with that want of exactness which was common amongst the authors of his time, does not always give us sufficient particulars concerning the nurserymen he has referred to. Where was, for instance, the garden owned by Mr. Pearson, who was so moderate in his charges and so straightforward in all transactions that he got "much chapmanry?" His successors in these days would say he sold at far too low a figure, for Gibson declares that his price for Cypresses 3 feet high was only 4d. Verspruit is another he mentions—seemingly a Dutchman from his name—who had grounds near London where he reared Hollies and other "greens." He was less moderate, since he got from Sir Henry Capel of Kew £40 for a couple of *Lentiscus* trees (*Pistacia Lentiscus*); just then they were esteemed great rarities doubtlessly. It might be conjectured from the circumstance of this sale that Verspruit lived somewhere in the west of Middlesex, possibly at Chiswick, Hammersmith, or Kensington. An early patron of evergreens, Sir Stephen Fox, who did reside at Chiswick, is named by Gibson; this amateur had two Myrtle hedges upon which he bestowed the attention of having them covered up in winter with a wooden casing made for the purpose.

Chiswick, near as it is to London, is still a pleasant spot to visit, and has attractions in addition to those presented by the gardens of the Royal Horticultural Society. Gibson, who saw it in 1691, would scarcely recognise the place in 1879; yet it is even now semi-rural, or more than that, though it does not exhibit a large expanse of open ground. But besides its garden spaces it has green fields, sometimes indeed rather environed with houses, where cattle pasture; and it has many scattered trees of venerable appearance, some of which may have been planted by the Dutchmen who came over in the reign of William III. But it had old trees long before his era, for Fuller tells us that he surveyed and admired a fine row of Elms that Dean Goodman set at Chiswick with his own hands when Queen Bess was on the throne. At Grove House near Sutton, an ancient estate with a history extending back to the early Henries, were numerous Walnuts and Chestnuts as old as the sixteenth century, probably, the fruit of which in favourable years produced £80 per annum. If we inquire about Chiswick when information becomes more reliable we find that in 1792 about 280 acres were in the hands of market gardeners, and rather more than that was covered with corn; 200 acres were used for grazing, and the rest of its 1200 acres belonged to private residences: one of these, and the most famous, was Chiswick House. The grounds which were attached to this estate, and which were at first laid out by the Earl of Burlington, must certainly have had a special attraction to gardeners of the eighteenth century. Here was to be seen one of the first examples of the Italian style, but, possibly at the suggestion of Kent, the formality originally adopted in the lines of the walks was modified by the introduction of curves. Kent

who has been rather oddly called the father of modern gardening, was in the habit of stating that he improved his taste by reading Spencer's picturesque descriptions; yet, strange to say, his illustrations of that poet are by no means excellent. Chiswick House was also famous for its Cedar avenue, its Yew hedge 16 feet in circumference, its orangery, its rosery, its forcing houses, and its fruit garden, to which Gay has alluded—

"Where Pope unloads the boughs within his reach,  
The purple Vine, blue Plum, and blushing Peach."

Chiswick does at the present time produce much fruit; the soil, a rich loam upon sand or gravel, being favourable, and the situation rather sheltered. If we turn out of the Brentford Road by the avenue of Limes leading to Chiswick House we find ourselves at its termination surrounded by orchards which extend to the east and west of the boundary wall of the Duke of Devonshire's grounds, while we have passed on our right the gardens of the Royal Horticultural Society. I am afraid that I am somewhat like the individual who was taken by a connoisseur to a picture gallery, but who, to his friend's disgust, expended all his enthusiasm upon the frames! The gardens are deserving of commendation, yet I was admiring chiefly the wild growth that skirts them on one side. Here are trees planted long before the Society took the land (in 1823), and amongst other species are some of the finest Hollies and Hawthorns to be seen near London; and the hedges that divide off the market gardens in the vicinity have retained much of the rural appearance they possessed at their first planting, though in some instances those that edged the lanes in the "good old times" of George III. have had to give way to the more effective protection of brick walls and high palings. Part of the orchards, however, seem rather exposed now to depredators; but then Chiswick lies a little out of the track of the roughs who wander on Sundays in our London suburbs. Probably the market gardens at Chiswick were in their most flourishing state in or about 1840, since then the gradual spread of the metropolis has led to the formation of some new streets and roads.

Though wishing to do justice to all we must put in prominence the name of Dancer, the firm which is also well known at Purer's Cross near Walham Green, having long done a large business in fruit and evergreens specially, as well as in general garden produce. There are many acres under their culture at Chiswick, and I observe that the system of under-cropping or double-cropping, opposed by certain modern authorities in horticulture, is yet followed to a considerable extent. Mr. Jessop of Grove Farm, and who also occupies some acres of land at Turnham Green, is noted for his excellent methods. The names may be mentioned in addition of Mr. Mills of Grove Park, and Mr. Munt of Hogarth Lane. The house, once in the occupation of the great painter of human incident, after sundry vicissitudes was taken by a nurseryman named Clark, and it is now, with a moderate garden attached, in the possession of a Mr. Coles, who appears for one thing to have made Musk a speciality, for that plant one is invited to purchase by a notice outside Hogarth House.

Gardens and orchards approximate to the road that runs from Hammersmith across Turnham Green to Brentford, near the venerable sign of "The Packhorse and Talbot," on both sides of the way is land under the cultivation of Mr. Bagley. Rather nearer to Turnham Green is the Chiswick Nursery, which is also in the main thoroughfare, and obtained its repute while it was in the hands of Mr. Glendinning; it is now Mr. Ewen's, and helps to encourage floriculture in the neighbourhood.

Turnham Green farther westward has now market gardeners where it had farmers in the last century; amongst others might be specified Mrs. Sophie Collis, Messrs. Dawes, Hicks, and Jeffrey. There is some garden ground at Brentford where formerly, early in this century, the Messrs. Ronalds had extensive nurseries. Mr. Pestridge of Boston Park Nursery is at present a producer of choice Pelargoniums and other exotics.—C.

#### DUPLICATE ROSES.

Now that the question of what have been designated "too-much-alike Roses" has again cropped up the present would be a most convenient time for a free ventilation of the subject, and a favourable opportunity for soliciting the opinions of growers and exhibitors respecting the matter at issue. This is a subject that requires careful handling, because the greater part if not all of those "too-much-alike Roses" are fortunately very good ones, and to taboo them as duplicates should there

be only one point of distinction between two varieties would be a loss to many exhibitors who have to exhibit stands of seventy-two and forty-eight. On the other hand, if the difference between them is so slight that they cannot with any degree of certainty be identified, the fairest way for all would be to have such written down as synonyms.

If one of the Secretaries of the National Rose Society would take the matter up and obtain the opinions of the successful exhibitors at the Society's Shows during the last three years, and submit these opinions to the Committee of the Society for their judgment and decision, there is every reason to hope that the question might be fairly and satisfactorily settled for some considerable time. As it stands it tells heavily on a conscientious exhibitor, who would not knowingly set up one for the other even to spare himself the mortification of losing a place in the list of prizewinners; whereas it might be the means of adding several points to the stand of a less scrupulous one, who feels that by so doing he can nearly or quite defy detection.—OXONIAN.

#### WORK FOR THE WEEK.

##### FRUIT HOUSES.

**Vines.**—Vines in midseason houses from which the Grapes have been cleared should now be divested of their laterals down to the principal buds, which are to be retained for next year's fruiting, doing so, however, without injury to the old leaves, as upon their preservation depends the maturation of the buds, which should be plump and well ripened. Vines that have not as yet borne fruit may be treated in a similar manner, so as to secure by full exposure to light the hardening of the wood. A free circulation of air is necessary, and in the case of young Vines, or where there is the least doubt about the thorough ripening of the wood, fire heat will be necessary. When the laterals have been removed, the old mulching, if any have been employed, should be cleared off the borders, and a top-dressing given of turfy loam with about a sixth of decomposed manure and a sprinkling of half-inch bones. If the roots have not penetrated the mulching remove the soil down to them and replace it with fresh compost. In the case of inside borders afford a moderate watering, and allow those outside to have the benefit of October rains; and instead of adding manure to the loam, mulch the surface with 8 or 4 inches of fresh horse droppings, covering with dry litter or bracken by the end of October or early November. In the case of borders only partly made, a breadth of 2 feet may be added to the front, choosing a dry day for the operation, mulching with horse droppings, and covering-up as before advised. Every attention must be given young Vines planted this spring or early summer, keeping the foliage clean, removing all laterals, and maintaining a warm well-ventilated atmosphere until the canes are thoroughly ripe. Continue sharp firing accompanied with a rather free circulation of air in houses containing Muscats and other late Grapes until the later are ripe and thoroughly finished, when a gradual reduction of temperature must take place, otherwise the fruit will shrivel, a state of things that must be guarded against by not allowing the border, especially inside, to become too dry. Outside borders will in most instances be quite moist enough and should be covered with lights preferably, or some other means employed to throw off heavy rains. Hamburgs and other descriptions of thin-skinned Grapes require frequent examination for the removal of decayed berries, damp being their greatest enemy. It should be prevented as much as possible by fire heat in the daytime accompanied by free ventilation, allowing the apparatus to cool down before night-fall, as night firing is not advisable. There must not be any further delay in the pruning of Vines intended to ripen their fruit by the end of April or beginning of May. Vines in pots intended for early forcing must be pruned forthwith; shorten them to 8 feet, and prune the side shoots closely. To prevent bleeding dress the cuts with Thomson's styptic or patent knotting.

**Figs.**—Fig trees in pots which are subjected to early forcing should have the roots examined; and as it is not advisable to increase the pot room, remove a few inches of soil from the base of the balls, cutting back the roots, and replace with fresh fibrous loam, adding about a tenth of old mortar rubbish and a sprinkling of crushed bones, good drainage being provided. Remove the loose surface soil and replace with the above compost, adding a fourth of well-decomposed manure. Afford a good watering, and place the trees where they can have plenty of air with shelter from heavy rains and frost. Fig trees planted out should be kept drier at roots, but avoid extreme dryness and a drier condition of the atmosphere will tend to promote the perfecting of the growth. As soon as the second crop in the latest house is all gathered the trees should be kept drier at the roots, and the house well ventilated in favourable weather. Any root-pruning or partial lifting should be done when the leaves show indications of falling.

**Peaches and Nectarines.**—The trees in late houses will need to have the shoots thinned out where too crowded, and those which have borne fruit cut out to a successional shoot at the base; this,



with free ventilation and gentle firing in dull weather, in cold localities, and with the growth strong, will assist in the ripening of the wood, which is of primary importance as regards next year's crop. The very late Peaches will not ripen this year unless we have a prolonged term of warm sunny weather. A little fire heat will be necessary to ripen them thoroughly. Trees that ripened their fruit in July will be approaching the resting period, the foliage now or shortly falling. They should be kept somewhat drier at the roots, but if the growth be very strong root-pruning or partial lifting should be resorted to before the foliage has all fallen. In the case of weakly trees the removal of the old soil and renewing with fresh turfy rather strong loam, with the addition of some crushed bones supplemented with a soaking of liquid manure not too strong, will improve them wonderfully. Trees that ripened the fruit in August and early September will need to have full ventilation, the shoots that bore fruit cut out, and where too crowded thinned as advised for late house trees, giving the foliage an occasional washing with the garden engine to subdue red spider; and if there is any fear of the wood not ripening employ gentle firing, avoiding, however, a warm close atmosphere, which would be more injurious than otherwise. There must not be any lack of moisture at the roots, as it is necessary that the buds be properly nourished as well as the wood thoroughly ripened. Trees in pots required to be forced early must be attended to in top-dressing, removing the surface dressing and picking out the soil from around the sides of the pots, replacing it with fresh compost—turfy loam enriched with a fourth of manure and about a twentieth of crushed bones, giving a thorough watering. Trees in pots that have been forced several years may be turned out of the pots, disentangling the roots around the sides of the ball with a fork so as to permit of an inch or two of fresh soil being placed around the sides. In top-dressing and repotting the soil can hardly be rammed too firmly, and in both cases should be performed before the fall of the leaf.

**Strawberries in Pots.**—The autumn fruiters should be encouraged with weak guano water, 1 oz. to a gallon of water, and in the case of heavy rains and the fruit approaching ripening the plants should be placed in frames with abundant ventilation, which will improve the quality and colour considerably. Late-forced plants of *La Grosse Sucrée* as well as *Sir Harry* are showing and swelling the fruit admirably, both being considerably in advance of *Vicomtesse Hélicart de Thury*, which though a free bearer is small, yet when well thinned the fruit is improved in size and quality. Any of the autumn fruiters not required to fruit for some time yet may be retarded by placing them on a north border. There is nothing like a loose surface for Strawberries in pots, which prevents the soil leaving the sides of the pots, and admits of the water passing equally through the ball and moistening it thoroughly. A little dried horse droppings or cow dung rubbed through the hands, applied to the surface of the pots will keep all right there. Remove all runners as they appear, also weeds, and do not allow the plants to suffer through insufficient supplies of water. The plants should have plenty of space for the full exposure of the foliage to light and air, which is essential to a sturdy growth and plump well-developed crowns.

#### FLOWER GARDEN.

To compensate in some measure for the absence of the usual brightness of the beds and borders no exertion should be spared to have the surroundings as neat and well kept as possible. The lawn should be well mown and rolled, the edges neatly trimmed, and walks made clean and smooth. The beds and borders also should be kept as neat as possible, looking over them frequently for the removal of decayed leaves and flowers and irregular growths. *Violas* have done splendidly this year. Cuttings of these should shortly be inserted, they succeed well in any sheltered border, selecting young growths from the base of the plants, and inserting them firmly in moderately rich loam surfaced with about half an inch of sand. Every cutting will strike provided they do not want for water. The propagation of *Calceolarias* will soon require attention. The frames for their reception should have a sheltered position and be placed so that the lights face the north. Place in the frames about 6 inches of loam with a third of leaf soil, surfacing with an inch of sand. The cuttings should be taken from the base of the plants, short stubby growths of two joints and the growing points, cutting them transversely below the lowest and removing the leaves from that joint, only inserting the cuttings to the next pair of leaves, giving a good watering. The lights only need be employed to ward off heavy rains and in case of frost; whenever the air is mild too much air cannot be given. *Violas* may also be inserted in frames similar to *Calceolarias*.

The tender varieties of bedding plants will soon require to be placed under cover. Let those recently propagated be well hardened off by free ventilation; and though it is desirable to continue the tender plants out as long as possible, it is advisable to have some light protecting material at hand to throw over them in the event of frost, as many of the succulents are extremely difficult to winter if they become in the least injured. Similar remarks apply to the tricolor, bronze, and other ornamental-leaved varieties of *Pelargoniums*, which winter very indifferently if at all frostbitten. Mixed borders are still gay,

and to render them thoroughly enjoyable keep them as trim as possible. Dead and decayed leaves and flower stems should be immediately removed as they appear, placing supports to the autumn-flowering plants. Beds of *Pinks* may still be made, the earlier the better, digging-in 8-inch thickness of old manure; and beds of *Pansies* should be planted for spring flowering. *Carnation* and *Picotee* layers should be taken off and potted in pairs in 4½-inch pots, employing turfy loam thoroughly reduced, with a fourth of leaf soil or old sweetened manure, and a little sand. They may be placed in a cold frame kept close for a week or ten days, and shaded from mid-day sun, afterwards exposing them fully. Any gaps in the mixed border occurring through the decay of annuals may be filled-in with *Wallflowers*, *Brompton Stocks*, and other biennials, so that they may become well established before winter. It is not possible to have too many spring and early summer-flowering hardy plants, therefore plant them whenever suitable places are available.

No time should be lost in preparing the ground for *Tulips*, *Hyacinths*, and other spring bulbs. Where manure is used it should be buried deeply and not allowed to come in immediate contact with the bulbs. The earlier that *Winter Aconites*, *Snowdrops*, *Scillas*, *Crocuses*, and *Narcissuses* are planted the better. The latter are amongst the most useful and beautiful of spring-flowering bulbs, and should be extensively planted, as they afterwards take care of themselves, increasing in size and beauty annually. Some of the best of the *Ajax* or *Trumpet Narcissuses* are—*obvallaris*, *maximus*, *nanus*, *Bulbocodium*, *bicolor*, *cernuus* and its var. *flore-pleno*, *moschatus*, *rugilobus*, *bicolor*, *Horsfieldi*, *nobilis*, *lorifolius*, *maximus*, and *lobularis* *plena*. The *Pseudo-Narcissus*, and *Telemonius plenius*, the *Mock Narcissus* *incomparabilis* and vars. *sulphureus plenius*, *alba*, *flore-pleno*, *aurantiacus plenius*, and *stella*; *Macleani*; *odoratus* and var. *minor flore-pleno*; and the *Narcissus* proper, of which the *Pheasant's-eye* is the type, are all excellent for cutting. The *Polyanthus Narcissuses* succeed admirably in well-drained borders, and are very desirable for cutting from, as they succeed those grown indoors.

#### PLANT HOUSES.

**Stove.**—*Dracenas*, *Palms*, and other tender plants that have been employed for the embellishment of cool conservatories in summer must be removed to warmer quarters before the cold weather sets in, or they will be liable to lose their lower leaves. The first batch of *Poinsettias* should now be placed in the stove where the temperature is kept at 60° to 65° at night, keeping them near the glass, and if supplied with weak liquid manure they will make a fine display; the strongest plants should be so treated, but the weakest should be kept in a house 10° less in temperature, affording water only to enable them to retain the lowest leaves, which are apt to fall if the plants suffer for want of water, whilst if overwatered they lose the roots, which is fatal to their flowering. These plants will come in late after the others have done flowering and be very useful. *Euphorbia jacquiniæiflora* must not be allowed to remain too long in a cool house, or its roots will perish. A portion of the plants may be placed in the stove for early flowering, whilst a later batch may be continued in a temperature of 50° to 55° at night. *Centropogons*, *Sericographis* *Ghiesbreghtiana*, and *Thyracanthus rutilans*, *Eranthemum pulchellum*, *Plumbago rosea*, and *P. coccinea* *superba* should also be assigned light positions in the stove, and if a reservation be made of the smallest plants to be kept somewhat cooler a successional bloom will be secured. *Gesneras* *zebrina splendens* and *exoniensis* should have light positions, and be kept well supplied with weak liquid manure. Similar remarks apply to *Tydsas* for winter flowering. The old *Achimenes coccinea ignea* is very bright in colour, and makes a fine display in the stove in autumn, it being supplied with weak liquid manure occasionally. *Lasiandra macrantha* is a very beautiful purple-flowering plant at this season. If grown as a cool stove climber it is very effective. *L. macrantha floribunda* is of more compact habit. *Achimenes*, *Tydsas*, and *Gloxinias* that have ceased flowering should be placed in warm rather dry positions in the full light, watering them moderately until the tops have died down. *Caladiums* should not be kept dust dry after their leaves decay, nor must water be reduced too suddenly; they should be kept in the stove constantly with a little moisture at the roots so as to keep them sound, as when kept quite dry the corms are apt to decay. *Ixoras* that have yet flowers to open should have every care to preserve them as long as possible. Do not syringe more than is necessary to keep down insects, as too much moisture causes the blooms to be injured and drop prematurely. *Allamandas*, *Dipladenias*, *Bongainvilleas*, and *Rondeletias* that have a considerable amount of flowers set may be made very useful without in any way injuring their next year's flowering, only giving sufficient water at the roots to keep the plants from flagging, by which means the wood will ripen and the bloom open. The temperature of this structure should be maintained at 60° to 65° at night and 70° to 75° by day, with an advance from 10° to 15° from sun heat, admitting air rather freely, and reducing the atmospheric moisture.

**Ferns** for the most part will have completed their growths, and will be able to bear moderate fumigation without injury, it being important to keep down thrips, which at this time of year are

often troublesome. Take care to fumigate moderately two or three times at intervals of two or three days. Less moisture will now be necessary both at the roots and in the atmosphere. Shading may now be dispensed with, the temperature reduced a few degrees, and more air given. *Adiantum cuneatum*, *gracillimum*, &c., grown for affording fronds for cutting, should have a rest by withholding water and a reduction of temperature preparatory to their being started into growth early.

Roman Hyacinths, Paper White and double Roman Narcissuses that were potted some weeks ago may be moved into heat so soon as they are well rooted, placing them near the glass so as to keep them dwarf, for when drawn they are not only unsightly as plants, but the flowers are not so durable. The temperature by artificial means should not exceed 55° by artificial means at the commencement of forcing.

### TRADE CATALOGUES RECEIVED.

T. S. Ware, Hale Farm Nurseries, Tottenham.—*A B C Bulb Guide, and Lists of Perennials, Hardy Orchids, &c.*

E. G. Henderson & Sons, Pine Apple Nursery, Maida Vale, London, W.—*Catalogue of Dutch and Other Bulbs, Herbaceous and Alpine Plants, &c.*

James Yates, Underbank, Stockport.—*Catalogue of Bulbous Plants.*

R. A. Saunders, Abergavenny.—*List of Bulbous and other Plants.*

### TO CORRESPONDENTS.

BOOKS (*Mis Chamberlayne*).—Notcutt's "Handbook of British Plants," price 2s. 6d., post free from this office 2s. 8d., is a small compact volume for the pocket, and will, we think, answer your purpose well.

GARDEN PLAN (*Gardena*).—We shall shortly publish notes relative to the above subject, from which you may probably gather the information you require.

MANUKU OR TI TREE (*M. S.*).—This is the New Zealand name of *Cordyline australis*.

SEEDLING PICOEAE (*Ashley Heriald*).—Messrs. Turner, Ware, and Hooper have raised similar varieties from Prince of Orange or King of Yellow. Your variety will make a good border plant if having a yellow ground suffused with purple with small stripes of bright scarlet. Mr. Turner had a first-class certificate for a variety at the National Ornamental and Picotee Society at South Kensington in July, 1878. It, however, showed more scarlet than the flowers sent, with a better edge.

GRAPES NOT RIPENING (*Disappointed*).—If none of the Grapes are greener than those you have sent the bunches will ripen if you maintain a night temperature of 60° to 65°. The heat will also benefit the Vines by maturing the wood. It would have been better if you had applied a little more fire heat in the spring so as to have accelerated their growth early in the year, and less firing would be requisite now, and the fruit would also probably have been better—that is, larger and more highly finished.

POINSETTIA LOSING THEIR FOLIAGE (*J. Spencer*).—Provided you keep the roots in a healthy growing state the foliage will remain fresh, but if the roots receive a check either by cold, which is not infrequent at this period of the year, or by a deficiency or excess of water, the leaves will inevitably turn yellow, and the plants will be in a great measure spoiled. Remove them at once from the frame and place them in a warmer structure, yet not in one highly heated, as a sudden change of temperature is often very injurious. A minimum of about 55° will be safe for a week or two, then advancing to 60°, increasing to 65°. Keep the plants as close to the glass as possible, and with due care you will have healthy foliage and fine heads of brilliant bracts.

SOWING CALCEOLARIAS (*E. Jacob*).—If you desire to have fine plants you had better purchase some that are now ready for being potted, as those raised from seed sown at the present time must necessarily be small, yet with careful attention and good cultivation they will flower next May. Sow the seed thinly on moist light soil, and place the pot in a frame or greenhouse. If you stand the seed pot in a deep saucer containing water, and keep the surface of the soil quite dark for a time, the seed will germinate without having to be watered. The moment the young plants can be perceived light must be gradually admitted, and eventually the pot must be placed on a light shelf near to the glass in a greenhouse. After the seedlings appear the soil must be kept regularly moist; and it is better to apply the water very gently from the spout of the water pot to the sides of the seed pan, so that it floats over the surface of the soil in sufficient quantity to penetrate the entire mass, than to sprinkle the young plants with a rose, which often causes them to damp-off, on account of the soil being too wet on the surface and too dry below.

RAISING LOBELIAS (*Devonian*).—As you desire to raise a number of plants from seed and possess a light greenhouse, but no stove nor heated frame or pit for accelerating their growth in the spring, you had better sow the seed at once. Sow and treat generally the same as we have advised E. Jacob in reference to Calceolarias. The Lobelias may be left in the seed pan until February, when they will be ready for pricking-off, and will make much finer plants by May than you can obtain from seed sown in spring. They require to be wintered on a very light shelf in a house where the night temperature during the winter is about 45°. They will then grow steadily, and if not too thick will not be drawn.

CHEERY LEAVES BLISTERED (*M. M.*).—Your plants have been attacked by the Cheery fly (*Tephritis opopordinis*). The only remedy now is to remove the worst portions of the leaves and crush the grubs in the others, and to dust the foliage occasionally with soot so as to render it distasteful to the flies, which deposit their eggs in the leaves.

STRAWBERRIES UNDER GLASS (*J. E.*).—As you wish to keep the plants in pots "all the year round," yet do not require to force them, pits or frames would be preferable to a house during the greater portion of the season, and after fruiting the plants should be placed outdoors. Until the plants commence flowering they will be better with the pots placed on ashes

in a frame than on a shelf in a house. The frame you suggest will do very well, and will answer your purpose as well as a more expensive structure. A shelf 5 inches wide will afford ample room for a row of 6-inch pots; but three wider shelves, as shown in your section, would answer equally well for the frame, elevating the back rows of plants on inverted flower pots as required.

PRIZES AT EXHIBITION (*William Shuttleworth*).—Had you sent us a schedule with the rules of the Society and conditions of the Exhibition we should have been better able to have answered your question; but, as far as we understand the case, we think prizes of the nature to which you refer should be limited to the classes stated in the schedule, unless a notification was issued to the contrary.

CLIMBING ROSE AND CLEMATIS FOR TOWN GARDEN (*Agricola*).—As you wish to have Gloire de Dijon by all means plant it. Aimée Vibert will also probably succeed if you obtain healthy plants and plant them in good soil, syringing them frequently during the summer to keep the foliage free from sooty particles and insects. Clematis Jackmanni is the best variety for your purpose. It grows and flowers freely in suburban gardens near London.

CIMICIFUGA WITHERING (*X.*).—As your plants have been well attended to and have not suffered by want of water we can only suggest that they have been kept too close and shaded too much, or that they have been potted too lightly in over-rich soil, which has induced growth of an extremely succulent nature. If the plants require a shift pot them rather firmly in sound loam enriched with about a third of very much decomposed manure, shading only when it is absolutely necessary, and admitting all the air possible, removing the lights entirely during nights that you are sure will not be frosty. Had you adopted this treatment sooner the plants, we think, would have been more sturdy and better able to resist a few hours' sun than they appear to be now.

EARLY CABBAGES (*E. T. H.*).—You cannot have a better small early Cabbage than the true Atkins' Matchless; but it is too late to sow seed now for producing an early crop. The plants should now be quite large enough for being drawn from the seed beds and pricked out.

PHLOX DRUMMONDI FALLING (*Idem*).—These plants usually thrive well in sandy soil, provided it is enriched with manure, and the plants are dwarf, stout, and healthy when planted out. They are more likely to succeed in such a soil than Verbenas. Your plants were perhaps not well prepared for planting out, and you also probably planted them too thinly. We have seen some very fine beds of these Phloxes this year, although the summer has been cold and wet.

PINKS IN BEDS (*A Constant Subscriber*).—The best situation is the slope of a bank where the bottom is dry. If moderately elevated it may, if on a wet bottom, be more easily drained. If the soil is naturally of a good quality, and not more than three years under culture, it is well. The Pink requires a generous soil, moderately manured with thoroughly decayed stable litter. This, if the soil is good, may be laid upon the bed intended for Pinks 3 inches thick about October, and it should be immediately dug-in deep, and the soil well mixed with it. To accomplish this well it is of advantage to dig the bed or piece of ground two or three times over. If the soil is heavy and the situation low the soil had better be entirely removed and the bottom of the bed well drained; then bring in some good light loam, the top spit of an old pasture that has been laid up, and turned over, and mixed with dung twelve months previously. Raise the bed from 4 to 6 inches above the natural level of the garden, keeping up the edges either with long slates or boards. The best time to plant is in the early part of September. If planting is delayed a considerable time after the pipings are rooted they become weak and long-legged, and are so tender that they suffer from the autumnal winds, and many perish if the winter sets in severely. By being planted in the blooming bed as early as September the plants become well established, firmly rooted, and even make some growth before winter sets in. By being well rooted the frost will have less power to throw them out of the ground. Plant across the bed in rows 6 inches apart, and 8 inches from plant to plant in the row. A little protection from very severe frost will be useful. That protection consists in laying upon the bed between the rows a thin covering of either very short littery dung or one-year-old leaf mould. If neither of these is at hand a covering of decayed tanners' bark will answer the purpose. When the severe weather of winter is over see if any of the plants have been disturbed by the frost, press them down gently into the earth, and close it to them with the hand. The heavy spring rains will soon make the soil hard, and when such is the case stir the surface of the soil with a very short three-pronged fork, being careful not to disturb the roots of the plants. The mulching, if very long, may be partially removed, and the rest mixed with the soil in the operation. This forking may be repeated as the plants advance in growth, and will be useful to keep down the weeds as well as keeping the surface of the soil loose and open. As the season advances and the heat of the sun becomes powerful a second mulching will be desirable. The former mulching was used to protect the roots from the frost; this second one is to shelter the roots from the heat and drought. The following are hardy and good varieties:—Regina, Annie Chater, Beauty, Bertram, Blondin, Charles Waterton, Clara, Diadem, Dr. Maclean, Edith, Ernest, Eustace, Excellent, Exquisite, Godfrey, Ivanhoe, John Ball, Lady Craven, Marion, Mrs. Waite, Picturata, President, Prince Frederick William, Superb, and Victory.

PROPAGATING DOUBLE WALLFLOWERS (*A. Boyle*).—The double yellow Wallflower to which you refer is very valuable for conservatory decoration in early spring, and equally so for the flower border during April and May. In order to have fine plants for pots the cuttings should be taken when the plants are flowering. At that time they produce an abundance of young growth, which if inserted in sandy soil in pots and placed in heat, watered and shaded—indeed treated precisely the same as Fuchsia or Verbena cuttings—they will strike in a fortnight or less. They should then be placed in a cooler position, and eventually be potted in small pots, kept close for a few days, and then be placed in frames until they can be planted out, or be shifted into larger pots and plunged in ashes in the open air. If the plants are stopped twice or thrice, but not later than July, they will form fine bushes and will flower early in the season. Other varieties, both double and single, may be propagated in the same way. Cuttings or slips of stubby side shoots inserted in sandy soil under handlights in June, kept moist and shaded to prevent flagging, also strike readily, but not so quickly as those placed in heat earlier, neither do they make such fine plants the first season. The slowest of all modes of increase is that to which you refer of inserting cuttings in a sunny position in the open ground in summer. We have grown these plants for many years and by inserting cuttings in April we do not lose 1 per cent. When the plants are planted out in early summer for lifting



in the autumn they cannot have a too exposed and sunny position, and the soil should be firm and rather poor instead of being rich and deep. The plants then grow sturdily and woody instead of tall and sappy, and are in the best condition for enduring frost in winter and for flowering early in spring.

**DESFONTAINIA SPINOSA** (*W. S., Bradford*).—Your situation is probably too cool for it out of doors, unless you plant it in a sheltered nook where the soil is specially prepared and the site well drained; but your safe plan is to grow it as a greenhouse plant, plunging it outdoors in a sunny position in summer. As the plant is healthy it only requires to have its growth matured to produce flowers. The spray sent is of the true species. We think it would not be admissible as a foliage plant at an exhibition. Other correspondents—"D. D., *South Hants*," "BRIGHTON," and "J. Collingwood"—will find the information they require in another column.

**ROSE OF SHARON** (*H. Prince*).—In some English localities the *Hypericum calycinum* is so called.

**CAMELLIA CULTURE** (*A Subscriber*).—We do not know of a special manual. Practical cultural notes are contained in No. 944, vol. xxxvi, of the Journal, which can be had, post free, in return for 8d. in postage stamps, quoting the number required.

**WEEDS ON LAWN** (*A. H.*).—You will find it very difficult to eradicate the weeds. The best mode would be to dig up the lawn entirely, clearing out all the weeds possible; to enrich the ground with manure, adding lighter soil to produce a fine surface; and sow fresh grass seeds in the spring. Or a heavy dressing of manure applied to the lawn in winter, with such soil as you can obtain, mixed with lime, and in spring sowing a renovating mixture of lawn seed, would effect some improvement.

**EARLY WHITE GRAPE** (*R. D., Birch Dale*).—So far as we can judge from the few berries sent your Grape is the Muscat of Alexandria, and its earliness is in some measure attributable to the sandy soil in which the Vine is growing. You can readily raise young Vines from it by inserting eyes in the spring, and we should do so, seeing that it succeeds and ripens so well under cool treatment.

**HEATING GREENHOUSE** (*W. J. P. F.*).—A small boiler and pipes would be the most efficient means of heating the greenhouse, but a good paraffin lamp would keep out the frost, and with care would not seriously injure such plants as Geraniums.

**GOOSEBERRY AND POTATO** (*An Old Subscriber*).—The Gooseberry you name is possibly a local variety. We will write to Mr. Luckhurst on the subject. Woodstock Round Potato was exhibited at the Crystal Palace, but perhaps the tubers were selected from Woodstock Kidney. Early Rose, Snowflake, and some others classed as Kidneys occasionally produce nearly round tubers. We shall be glad to hear from you as you suggest on the subject named in your letter.

**PEACH AND NECTARINE TREES UNFRUITFUL** (*L. R.*).—If the trees make gross growth you may lift them with advantage, and re-arrange as you propose, removing them just before the leaves fall. An important point is to train the branches and shoots thinly, so that the wood can be well matured.

**VARIOUS** (*Idem*).—If you will state the age of the Vines, and whether they make very strong or only weak growth, we will endeavour to aid you. The Clematis requires more nourishment, the Box shrubs having impoverished the ground. Either remove the shrubs, or apply a heavy dressing of manure. Rhododendrons, we think, will grow well in the soil you name.

**INSECTS ON VINES** (*Inquirer, Ashton-on-Mersey*).—The emergence of a specimen from the larva sent some time ago establishes the fact that the species infesting your Vines is *Tortrix pyramtrana*. This is scarcely to be called a common British species, but it is sometimes plentiful where it occurs. The usual food of the larva is the leaves of fruit trees, most frequently the Apple or Plum. That it should be found feeding upon the Vine is singular. It is not likely, we think, to resort to that plant unless much at a loss for food.

**NAMES OF PLANTS** (*Constant Subscriber*).—1, *Lycostera formosa*; 2, *Spiraea callosa*; 3, *An Oxalis*, but we cannot determine the species from the small scrap sent; 4, *Spiraea prunifolia*. (*S. W. W.*).—*Impatiens Noli-metangere*. (*Mac*).—We regret that we cannot name the Willows without seeing the catkins, otherwise we would be glad to assist you. (*S. W. S.*).—The very small specimens were so crushed and withered as to be quite unrecognisable. (*T. P.*).—Too much crushed and withered for identification. Specimens should be sent in small boxes, and if the stems are wrapped in a little damp moss the flowers usually arrive in a fresh state. (*Pem and Ish*).—The Fern is *Asplenium bulbiferum*; the Begonia, *Weltonensis*. The latter is of easy culture, and may be wintered in a greenhouse; if a little warm all the better. (*V. G.*).—1, *Adiantum formosum*; 2, *Polystichum* sp.; 3, *Platyloma falcata*; 4, *Lactrea tenericaulon*; 5, *Pteris argyrea*; 6, *Pteris longifolia*. (*Cistus*).—We think it is *Cistus incanus*. (*P. F. F.*).—As none of the specimens were numbered it is impossible to give their names so that you can understand them. (*Subscriber, Sussex*).—1, *Phyllanthron comorense*; 2, *Echynanthus Lobbianus*; 3, *Vinca alba*; 4, *Mussaenda frondosa*. (*Mary*).—As one of the specimens had no flowers and the other was much withered it is impossible to answer your question. The one partly in flower is probably *Hieracium boreale*.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### DRAINING OF HEAVY LAND.

WITHIN our recollection an immense extent of land has been drained; still, such a large area in the kingdom remains to be done that it is difficult to compute the area. It is, however, quite sufficient to know that certain large as well as smaller farms in various districts cannot be cultivated to advantage until draining has been effected. The causes of this may be various, for upon certain entailed estates we find that the pro-

prietor frequently does not feel sufficient interest in the property to induce him to undertake the work; in fact, oftentimes does not command sufficient capital for the purpose of such expensive undertakings as draining. Recent legislation has, however, given great facilities for such work, so that the cost may be charged on the estate. This circumstance has been the cause of large tracts of land being drained which otherwise might have remained in an unprofitable state for another generation. The home farms attached to the estates of noblemen and gentlemen have no doubt in most instances been drained probably at some former period; but when we recollect how different is the system pursued at present as compared with that in fashion or favour within our own experience, we contend that it is not always satisfactory for the home farmer to know that the land under his superintendence has been drained, because if it is still too wet for profitable agriculture the question of draining must be reconsidered. As an illustration of this matter we can refer to draining which we effected on our own property some fifty years ago. This land has since required to be drained again, and this has occurred entirely owing to the want of knowledge upon the subject at the former period. In fact, at the present time there is some difference of opinion amongst surveyors, land agents, and others as to the best method of laying the land completely dry under the varying conditions of soil and surface. It is, however, on this occasion the task we undertake, and will endeavour to lay before the home farmer not only the result of our own experience in the draining of land under our management, but likewise to bring forward and introduce the opinions and practical knowledge of others in support of our own, in order that what has previously proved an error of judgment may now be avoided, so that in future the work of draining the land, at all times involving a serious outlay, may prove a good investment, not only for the present time but in the future also.

We will consider heavy land as including all strong soils, and these vary immensely, because in some districts we find red clay, yellow clay, and blue clay, and other gradations of colour; either of these are oftentimes when unmixed with gravel very tenacious and hard when dry, yet when wet they resemble putty or beeswax in texture, and will hold water almost like an earthenware dish. These are some of the most difficult soils to make dry by draining, but still it often depends upon the soil which underlies and the depth of the clay above it. We will therefore endeavour to explain the best method of laying land dry by draining which has hitherto proved unprofitable in cultivation, either in consequence of its never having been drained, or because it has been done in an imperfect manner. We shall not upon the present occasion refer to the draining of pasture lands, believing that it will be the better plan to refer to them separately and at a future time.

The first remarks we have to make refer to a bygone period when draining was in its infancy, which is shown by the various simple methods resorted to, such as draining with stones, with fir bays, with alder and other poles, wedge draining, and also the mode of plug draining, whereby the clay land was either laid partially dry or was subject to a very short period of effective operations. Again, although our own tile drains laid in fifty years ago were the means of only partially drying the land, it is one of the first points we have to consider now, because it cannot answer to enter into an expensive process like land draining and reap only a partial benefit. The home farmer must therefore be satisfied with no system which will not completely dry the land at all seasons. Now to illustrate the case, we have seen numerous instances where all the above-named plans of draining had been done at some former period, yet they had all become inoperative from various causes. The stone drains had become blocked by earthy deposits, the fir boughs or havins the same, the alder poles had become decayed and useless; the wedge and plug draining having been formed from the soil itself having been ingeniously tempered and formed into drains were in time, through the action of the water upon the soil and also by the burrowing of moles, rats, rabbits, &c., rendered useless. Even the tile draining became inoperative in some cases from the drains having been laid too

shallow, others placed in the wrong direction and often without a proper outfall; and as tile draining was formerly done by the tile of a horseshoe shape with a flat tile to rest upon, yet in many cases in strong clay the mistake was made of omitting the bottom or flat tiles, the drainer probably thinking that the hard strong soil would bear the pressure upon the tile of the superincumbent earth, but we have never seen it answer the purpose even in the stiffest soils to omit the flat tile at the bottom. And, again, where the drains, although properly laid, in many cases they were laid in the wrong direction, or too wide apart, or too shallow, and portions of the surface soil proved to have been left too wet for profitable culture. This in several respects represents the draining done upon our own land previously to the year 1830; we therefore determined upon re-draining certain fields of a clay soil, and thus avail ourselves of the advantages offered by the use of pipe tiles as soon as they first came into use.

Our first illustration is a field of 11 acres having a moderately good fall from the upper to the lower end. The soil is strong loam with a brick earth, the subsoil having a few stones in it with veins of sand running through it, and at the upper end the bottom of the ditch exhibited quicksands at the depth of about 6 feet. In the winter of 1827 and 1828 this field was drained with arch and flat tiles at 2 feet deep; the drains were put in herring-bone fashion as it is called—that is, a leading drain laid down the incline and 6 inches deeper than the branches, which were placed 24 feet apart and across the fall of the land; and herein lies the mistake, for if all these drains had been placed in the same direction as the leader and placed at 24 feet apart this would have laid the land much drier. One important matter in this case was overlooked—that is, the quicksands existing at the top of the field, for that evidently was the chief cause of the land being too wet, as the water originating in these sands fed the subsoil throughout the field, and it rose to the surface through veins of sand, and thus injured the whole field. This field has been within the last twenty years re-drained upon another system—that is, the quicksands at the upper part of the field have been drained by a deep cross cutting varying from 6 to 7 feet in depth, and the remainder of the field has been laid dry by drains 8 feet deep at 24 feet apart, with 2-inch pipes, the quicksands drain being laid with 8-inch pipes and collars to prevent the sand entering the pipes with the water. This is now a fine field of land, and quite dry enough for all agricultural purposes, including the feeding of sheep thereon in the winter months.

The next lesson which we ask the home farmer to learn will be that of strong land upon chalk, the depth of the clay varying from 4 to 5 feet above the chalk subsoil. The clay in our field of illustration is of the most tenacious kind without any veins of sand, or any other variation at all in the surface, not even stones. Now, this clay is so tenacious that the horse tracts during cultivation, if the soil is moist, will hold water like a dish; it was therefore thought desirable when this land was drained to place the pipes deep enough to cut through the clay entirely so as to reach the chalk subsoil, and in order to enable the water to reach the pipes the drains were filled in up to the top with rubble chalk, and no doubt this greatly facilitated the passage of the water from the surface to the pipes. The drains, if I recollect rightly, were placed about 18 feet apart, and the land was laid sufficiently dry at all seasons for agricultural purposes. It did not so far alter the land as to make it a friable land, for it was a stiff clay after all, but worth nearly double the rental it had ever been before draining; but the most curious part of the subject of draining this field remains to be told, for although the 2-inch pipes were properly laid no water ever ran through to the outfall; instead of that the water evidently sank into the chalk soil and disappeared. Now, the lesson to be learned in this case is that the adjoining field of the same sort of soil was drained in the same way without the tiles, and it proved equally effective.

(To be continued.)

#### WORK ON THE HOME FARM.

*Horse Labour* should now be applied in autumn culture, or in case steam power is employed some horses will still be required in harrowing, rolling, &c., also in carting away couch grass and weeds, which may be brought to the surface after scarifying. The harvest being so late will hinder the work of autumn culture to some extent, in which case it will be advisable not to take in hand too much land for that purpose. We recommend that the land intended for mangold and for potatoes should be prepared if no more can be done, because it is quite impossible in ordinary seasons to clean the land by culture in the spring in time for the seeding and planting of early crops like these. Laying out the dung for wheat should next be attended to, but upon all dry soils sown out of sea it may be deferred until heavy rains commence and stop the autumn culture. The seeding also of trifolium and winter vetches must be done at once, if it has not already been effected. We fear that in some districts the harvest and work of the horses in connection with it will not be completed for several weeks, and our allusions to autumn culture, seeding of green fodder crops, &c., have only been made contingent upon the fact that the horses may not be required, or be occasionally at liberty,

before the harvest is over. It is only in a few instances, owing to the late and showery harvest, that the threshing of corn can be done in the field; but for the portion of corn which is required first, for either sale or use on the farm, it is a good plan to cart to the threshing machine in the field, and either rick or truss the straw as may be required as it comes from the machine, as it saves the risk and expense of stacking, thatching, &c., and when the corn and straw are both dry the latter never weighs better than when threshed in the fields. We have seen this done during the present harvest with great advantage. When the straw is required for cattle fodder it is a good plan to have it spiced. The cheapest article now used for this purpose is that sold by T. Bowick & Co., Bedford, called the "Botanic Flavourer," and the cost per ton of straw where properly applied, is not more than 2s. Straw stacked and thatched having been spiced is not only more attractive by the aroma of the spice, but is increased in feeding value, for the cattle, owing to the vegetable compounds contained in the spice. This is the time of year for stocking arable farms with sheep in various districts for winter fattening, and for breeding lambs to be fattened in the spring upon roots, &c. The season having been so wet we understand that a large portion of the sheep now slaughtered by the butchers for mutton are actually suffering from rot or coarsh more or less, with large numbers of flukes in the liver. We must therefore recommend the home farmer to use extreme caution in the purchase of his stock of sheep for winter feeding, and take always a written warranty of soundness from the seller at the time of purchase, and also make a careful inquiry as to the soil and district upon which the sheep have been kept during the summer. If from perfectly dry land they would be tolerably safe, but the diseased sheep to which we have alluded have been kept chiefly in different districts where pasture land prevails.

*Hand Labour.*—We fear for some little time more work will be required than can be got through in good time. The weather having been so unfavourable for the harvest has been the cause of a continual change of work, oftentimes in the course of a single day. The hand-hoeing of root crops of all kinds has been ineffective owing to the continued rains, and in many cases where the roots are advanced in size and the land very weedy it is quite hopeless to clear it now, and the roots must remain as a short crop for use, and the cleaning of the land be deferred to a future opportunity, most probably not before the spring of next year. Store pigs and breeding sows may now be kept carefully looked after upon the corn stubbles, but they should be properly rung, especially when they are allowed to feed in the barley stubbles seeded with clover. Nearly all the flocks of sheep, particularly in the pasture districts, are suffering from foot rot or lameness of some kind. It is often called foot-and-mouth disease, and has been treated for that complaint in many instances, but we have reason to believe that it is frequently nothing more than an attack of foot rot brought on by the continual rains. Let the cause, however, be what it may, the disease can only be kept within bounds by constant and daily treatment, by paring and dressing the feet with mild caustic remedies. The land should now be set out for sowing the seeds for the production of green fodder crops, such as rye, or winter oats, and vetches. This should not now be delayed, because these crops are the more valuable for being early as spring food for sheep and cattle. This is now the time for purchase of the horned Dorset and Somerset ewes for the production of early lambs, and upon the home farm and park lands they are not only ornamental but also very profitable when properly cared for. The fairs for this stock are held at Appleshaw and Weyhill in Hampshire, and the various fairs in their native counties are held chiefly in the first week in October; and the breeders of this stock take care to turn the rams with the ewes at a time when it will insure the period of lambing to commence immediately on the arrival of the ewes at their new home after the fairs. In fact these ewes are often held over to breed from upon the dry land farms in the home and south-eastern counties, and these are now just beginning to drop their lambs, and under these circumstances are sure to yield a large number of twins.

#### CLUB-ROOT FUNGUS (PLASMIDIOPHORA BRASSICÆ, Wor.)

THERE can, I think, be little doubt that the fungus or vegetable parasite discovered by M. Woronin, and by him named *Plasmidiophora Brassicæ*, is the true cause of what is called club-root and finger-and-toe in turnips, cabbage, charlock, and other cruciferous plants. The great importance of the turnip crop in the husbandry of this country gives the investigation of this fungus an interest of a highly practical and economic character. We are here in the presence of an enemy the strength of which is certainly on the increase, and which threatens, if no countervailing strategy can be devised, to render the turnip crop as uncertain and precarious as the potato crop has been rendered by another parasitic fungus, the *Peronospora infestans*.

The observations of Woronin were made chiefly on the cabbage, and in reference to the great destruction caused in recent years to the cabbage crop in Russia, and more particularly in the market gardens around St. Petersburg. My own repetition of these obser-

vations has hitherto been chiefly confined to the turnip, including only such comparisons with cabbage, charlock, and mustard as showed that the parasite was the same in all cases. That it is so, however, is an assumption based only on the optical data patent to the microscope. The plasmodic masses ramifying through the cell tissues of the roots have the same appearance in all these plants; while the ripe spores which form the final stage of the plasmodium, and which are globular in shape and very uniform in size, have also in all cases the same dimensions: thirty-four millions of them can lie upon a square inch.

It would be impossible to go into the whole subject at present. I shall therefore select one branch. Considerable interest has recently been awakened in the salmon disease. That disease is supposed by some to be produced by a fungus, the *Saprolegnia ferax*. By others it is supposed that the fungus is consequent on the disease. And hence arises in this and in other cases the need of a clear conception of parasitism, which may be defined as the state of a living organism living upon the life of a living organism. In any given case in which a fungus is found locally associated with an organised body in a state of vitality, or in a state of disintegration, the question may be raised, Is the fungus a parasite? Is it a fungus which requires a living host for its growth and development? Is the club-root fungus a parasite? Does the club-root fungus demand a living and healthy plant in the tissues of which to work out the cycle of its life?

The true answer to this question, if it can be given, is highly important to agriculture. For, if it shall appear that a weak, or sickly, or decaying plant is required as the proper soil of the club-root fungus, then this fungus is not a parasite, and its presence merely indicates antecedent disease arising from some failure of practical husbandry. Something has been done, or something has been neglected, in consequence of which the turnip plant and other plants fall into a state of disease and then become the prey of the club-root fungus.

But, on the other hand, if it shall appear that the club-root fungus is a true parasite, a plant living upon the living substance of another plant, then this fungus assumes a different attitude towards agriculture. Conditions calculated to secure in its absence a healthy crop of turnips are of no preventive value. If the fungus is a parasite, the proper nidus which it requires is a living and healthy turnip. That there are numerous fungoid parasites waging perpetual war upon living plants is well known, but is not popularly accepted in its full significance. We cannot suppose from any facts known to us that all the potato crops in the country must be in a state of disease and decay before becoming the prey of the potato fungus. The grasses do not require to be in an unhealthy condition before being attacked by ergot and smut and rust; and there seems little doubt that the *Hemiteia vastatrix*, the fungus which destroys the coffee crops, is also a true parasite, attacking the healthy leaves.

Now, what is the nature of the evidence that the club-root fungus belongs to the class of true parasitic fungi?

The root of the turnip is frequently attacked at a very early stage. Turnip seeds may be sown, and the plants matured, in a saucer in water. I have found seeds thus sown, and with the water mixed with the pulverised turnip clubs of the previous year, to have their roots attacked when only about the thickness of one-hundredth of an inch. But in such circumstances the tap-root itself, even where no cause of disease has been introduced, never attains to any kind of bulb, or to a thickness beyond two or three hundredths of an inch; so that when attacked by the fungus in water, the portion of the root affected, not growing so rapidly as to afford room for the disrupting plasmodia of the fungus, is speedily killed and goes into disintegration. But the club ceases to enlarge whenever the root dies. Could the granular plasma of the fungus grow upon decaying matter, there seems no reason why the club should not go on enlarging after the death of the root. But if it is a parasite the reason is plain—it cannot live on dead matter.

It is, however, when the seeds of the turnip are planted in earth that some of the phenomena can be best observed. I find that the ripe spores of the fungus exist as spores from one season to another. During the intense frosts of last winter (1878-79) they remained as bright and clear as when newly matured. They are not to be killed by being turned up to the frost. I mixed a quantity of the rotten clubs of crop 1878 containing these spores with garden mould in which no disease existed, and with the mixture filled a number of pots, some having drainage and some having close bottoms. Good turnip seeds, not known to be in any way defective, were sown in the pots. All the resulting plants became at an early stage excessively and fatally clubbed. The two largest pots, having the ordinary flower-pot drainage and standing in the open air, had each between thirty and forty plants all clubbed, while the turnips in the same garden mould beside them were quite free of disease. The plants in the pots which had no drainage, and which from the wetness of the season were frequently soaking in water, had a large development of lateral roots; they did not grow so rapidly as the plants in the drained pots, and the clubs did not attain to so large a size.

Now there seems to be no reason whatever for assuming that

all these plants were first in a state of disease before being attacked by the *Plasmodiophora*. Indeed, it was quite evident that the strongest and healthiest plants were the most favourable to the full development of the fungus. The tissues of a small and feeble plant are speedily disrupted, the cells are choked with granular fungoid matter, and the plant dies. In stronger plants the contest goes on a little stronger. The attack is frequently made at two or three centres; and in many cases even upon a slender root, the club is chiefly developed on one side. Where there are lateral roots coming into the tap-root above the clubs the plant goes on growing for an indefinite length of time, for the matter of the fungus does not appear to be carried by the motion of the sap, but it extends by growth from particle to particle. Where the attack is early and of a severe character the plants are killed when young. Where it is less severe, a slow and local process of clubbing goes on during the whole season, and the bulb arrives at fair dimensions. But it is remarkable that, while turnips and cabbages are very often killed outright, charlock and mustard usually go on to flower and seed in defiance of considerable clubbing. But in all cases, whenever the plant dies the club ceases to increase in size, and in all probability the fungus, which is the cause of the club, is not the direct cause of the subsequent rotting at all. A club taken and dried will preserve for any length of time. But the clubs are an easy prey to atmospheric disintegration, and to fungi and infusoria which revel in dead matter.

The evidence seems to me to show that the healthier plants are not the least liable to the attack of this fungus. In going along a drill of turnips in which nearly every plant is affected, there seems nothing to imply that the few which escape were in any respect healthier than the many which are destroyed. Certainly the balance of probability is in favour of regarding the *Plasmodiophora Brassicæ* as a pure parasite, demanding a healthy living host for working out its career from a spore to an ameba, from an ameba to a plasmodium, and from a plasmodium back to spore again. I am not perfectly convinced that this is the exact course, but Woronin's conclusions are not to be modified without mature consideration.

It would thus appear that the turnip husbandry of this country is in presence of a destructive parasite. Hitherto the grower of potatoes has stood helpless before the forests of *Peronospora infestans*, with stems small enough to come out in half-dozens from the stomata of a leaf. And here is a fungus of an altogether different and less palpable type, devouring the turnip crop with perfect impunity. Can anything be done to stop its ravages? A reduction in the frequency of the turnip crop by permitting the destruction of the germinating power of a greater number of spores, would undoubtedly restrict the virulence of the disease; but this is not properly to cure it, but to give way before it by withdrawing the crop and foregoing the profits to be derived from it. Experiment shows that the disease is not a mere result of peculiar modes of tillage or of characteristics of the season, though these may promote or retard its growth, but that it is a plant, one crop of which arises from the seeds of a previous crop. Probably under existing systems of rotation, wherever the club-root fungus has got a firm hold, extermination is impossible. Other questions then arise not belonging to the purpose of our meeting. Who knows whether it may not be good for agriculture that such fungi as those which partially destroy the potato and turnip crops cannot be exterminated? Thanks are undoubtedly due in certain parts of our country to the *Peronospora infestans* for destroying a means of subsistence which was over-abundant without enterprise and energy, and left the better resources of the cultivators to waste themselves in idleness. And who knows but the prevalence of *Plasmodiophora Brassicæ* may divert the course of agriculture into a new and more fertile direction?—(Read by Mr. S. WILSON before the Cryptogamic Society of Scotland.)

#### JAPANESE BANTAMS.

THERE are many poultry fanciers in the truest sense of the word who have but scant accommodation for their pets, and on whose premises it would be absurd to attempt to keep large fowls. There are, however, many little corners, small unused yards, or neglected garden ends where Bantams can run and be happy. To those looking out for a breed as tenants for some such little nook we recommend Japanese Bantams. Long ago we used occasionally to see a pair or two at a show, and must confess that we did not admire them. At first sight they seem to have a stunted dwarfish look from the immense size of their combs and tails; but like many other birds, and people too, they must be known to be appreciated. We have given them a fair trial, and certainly find them to be some of the quaintest and most amusing of Bantams, and peculiarly suited to a garden, for their legs are extremely short and they hardly can scratch if they would. In size they are slightly larger than the general type of exhibition Bantams, or rather what exhibition Bantams used to be, for we have lately seen prize Sebright and Game Bantams which would at one time have certainly been disqualified for their large proportions. Japanese, however, appear larger than they are from the great development of their feathering, especially of the cock's tails.

Their carriage is most coxcombical and in exaggeration of the gait of the old-fashioned Bantam. Their combs are single and well developed, of the Dorking shape. The cock's head should be thrown back till it almost or quite touches his immense tail. The tail itself is not sickle-shaped, at least the longest feathers are not, but carried somewhat erect, and with a multitude of side feathers which make it very handsome. Their legs are yellow and very short, almost as short as those of Dummies. Their colour is very various; formerly none but pure white, or white with black markings were seen, now, however, they are seen of various colours. Among the many curiosities brought home by Mrs. Brassey in the "Sunbeam," not the least were a large stock of Japanese Bantams, about two dozen we think, of a great variety of hues. We will just give those which we know.

1. Pure white, which are very seldom seen.

2. White with what we may call black points. These are commonest, but also, we think, by far the prettiest type. Their marking is something like that of Light Brahmas, save that they have pencilling on the neck hackle. Their bodies are generally white with some dark under-feathering; their primary wing quills half white and half black, their tails chiefly black; the cock's tail feathers—i.e., all the curved feathers, are often laced or edged with white, while the black part of them is covered with a beautiful green gloss. The hen's tail is black towards the end, and gradually shaded into white at the base.

3. We have seen one very handsome black pair, or nearly black, for the cock has some rich copper on the saddle and wings such as one sometimes sees in a very dark Dorking; these were from Mrs. Brassey's stock, and have won at the Crystal Palace and many other shows.

4. From the same yard we have seen a small and very pretty pair mottled all over, black and white.

5. We have also seen a cock of the second-named type, but with copper colour across the saddle wings, which we did not much admire.

There is plenty of variety, then, in the colours of the breed to satisfy various fancies, and we suspect that they will be found to breed much more true to form than to feather—at least, if it be true, as we hear, that the above-named black pair have produced some pure white chickens. They have one merit, which we have often remarked upon as appertaining to old-established breeds of Bantams. In contradistinction to those which have been produced of late years by the aid of some large breed of fowls, they show no tendency to become too large from overfeeding. This is a great advantage where several breeds are kept, and where there is a general mixture of the young chickens.

We have found the hens fair layers and good mothers, though a little over-fussy. The chickens require very constant feeding and nourishing diet for their first three or four weeks, and must have plenty of grit to help them to digest the great quantity of food for their size that they swallow. After that they become extremely hardy, and do not seem to suffer from cold.

For those who require tame and uncommon pets they are admirably suited; they may be easily made as familiar and confident as dogs or cats. The cocks, though bold and aggressive towards larger fowls, are most attentive to their wives, and even brood the chickens at night. They are equally content with a low perch on a clean bed of straw in their houses; indeed a pair of our own had no other house than a Turkey hen's coop. There is no trouble about preparing them for exhibition; they have no leg-feathering like Booted Bantams, that gets broken on gravel or caught in straw; no combless heads to be shaven like Game Bantams, no lacing to grow mossy with age like Sebrights. As they are they may be caught up and put into the exhibition basket, and are by nature so tame as always to do themselves justice in the show pen.—C.

### GOOD RESULTS OF UNITING STOCKS—FOOD AND FEEDING.

BEFORE entering, according to promise, upon the question of feeding, it will be well for me to explain the benefit a stock which is to stand the winter derives from having an addition made to the number of its bees, for the perception of this benefit will of course lead to the abandonment of the sickly wasteful plan of burning wherever it is followed, and the substitution for it of driving and uniting. Cottagers, and perhaps others not cottagers, are likely to argue, "Every bee must eat something, therefore the fewer I keep in any hive during the winter the longer will the honey last and the richer shall I be in the spring." Conclusive as this may seem at first it is most illusory, and is not only untrue but very nearly the opposite of the truth. This we may understand by remembering that honey or sugar is consumed by the bees during winter, and converted by them into new forms of matter, really carbonic acid and water, and that during this conversion heat is produced, the heat within certain limits being just in proportion to the amount of honey consumed. The temperature of the cluster has to be maintained however low that of the surrounding air may be, and if the bees are few in number every one is forced to eat enormously in order that the great demand made

upon it for heat may be met; but let the cluster be large and numerous, then a moderate amount of food to each will suffice, because the quota of heat to be furnished by each is small. In the first case the vital energies of the bees are quickly worn down, and if they live till the spring exhaustion has hold of them and they die as quickly as young can be produced, the stock will be at best but a late swarmer; but with strong lots not only is the demand made upon the individual small, as is also the consumption of food, but the bees live on till late in the succeeding spring, their energies being still in reserve when winter is passed. Such hives recoup quickly as the days lengthen, and have often colonised before the little ones of autumn have begun to occupy outside combs. But this only half states the case, for with few bees sufficient heat can only be obtained by each one keeping itself in agitation; and since all muscular exertion must be paid for in food, little lots in activity may actually eat more than populous colonies capable of sustaining temperature in a perfectly quiet and restful state, while the former have frequently the additional disadvantage of having dysentery through over-distention before they can get a cleansing flight. With the idea of returning to this interesting question in the future let me now address myself to

FEEDING.—A lady some time since asked me the reason of "white bees" being found upon the floor-board of her hive. I replied at once this indicated great poverty, or, perhaps, imminent starvation; to which she rejoined, "No, that can hardly be, I have only a fortnight since taken from it a splendid super." This false idea that stocks which have added something to their owner's reputation for bee-mastership by supplying a super cannot require feeding, is so common that it needs exposure. The bees have been prosperous as the super testifies, but as a consequence have been raising brood rapidly. The body of the hive has been filled with it, and all their store has been placed in the upper part of the house, but the bee-keeper in removing it takes all the resources, while the heavy demand which the vigour of the colony has created only makes its case the more desperate. Always, then, examine hives that have given surplus, as these are as likely as others to require assistance. While poor hives will require feeding rich ones may be advantageously employed in building out foundations. Avoiding any interference with combs containing brood or eggs we remove the one best stored, and thus make room for a sheet of foundation in the centre of the hive and feed very gently, for the strongest stocks commonly refuse altogether to work upon artificial midrills unless food is coming in. The coolness of the weather will favour the operation, and soon a perfectly flat sheet of half-formed cells will be produced. This may now be transferred to the position of outside comb, and the process before described repeated. When the hive is next examined the worked-out sheet deserted by the bees may be taken away, and in the following spring will be of immense service in assisting increasing stocks. No season of the year is so suitable to this work as the present. United hives must be fed-up slowly at first to encourage breeding, and afterwards more rapidly until they possess not less than 20 lbs. of store. Less will carry them through, but hives left rich pay best the following year. Those using moveable combs can form an idea of the wealth of the stock by simple inspection, since each square foot of fully stored comb of the usual thickness of that found in breeding frames would weigh 8 lbs. nearly. A total equal to three perfectly filled Woodbury frames would be the smallest with which a stock could be safely left at the close of the breeding season; but no wise bee-keeper would wish to barish his favourites into a winter of unknown length, with a victualling insufficient for any extraordinary emergency. While poor hives will require feeding, the rich ones may be conveniently used in building-out foundations. When this is started it will not stretch or become irregular, and no time of year is so suitable to this work as the present.

FOOD.—The best food is made by boiling loaf sugar with water thus: Put 5 lbs. of loaf sugar into a quart of water and bring to the boil, now add two table-spoonfuls of vinegar and continue the boiling a few minutes. The vinegar prevents crystallisation of the sugar, so that it is always ready in the cell of the hive. Loaf sugar costs about 8½d. per lb., but as the weight is increased by the water the syrup costs about 2½d. per lb. Such a year as this extracting and then feeding will produce the most lucrative results. Let me earnestly caution all against feeding with honey, which unless done most judiciously is almost certain to lead to robbing. Plans for feeding will need another communication.—F. CHESHIRE, *Avenue House, Acton.*

CROPS IN ESSEX.—Mr. Mechi writes as follows to the *Times*:—"The threshing and dressing machines are now revealing the sorrowful fact that the deficiency in our corn crop, especially on heavy land and even on well-farmed land, is greater than was anticipated, verifying Mr. Caird's and Mr. Scott's estimates of 80 per cent. under average. We all expected a better result from the abundance of straw and numerous heads; but the latter are ill filled with very inferior shrunken kernels, and the straw, although bulky, lacks weight and has a dark mildey colour. Water-loving weeds have had undisturbed possession

among the corn crops, for their destruction was rendered impossible by the constantly saturated condition of the soil. Root crops are late, and only half a crop; potatoes much diseased. There has been heavy loss by death of lambs, and cattle have done badly on unripened watery grasses. In fact, the absence of sunshine, a low temperature, and excess of rain have prevented healthy development both in farm crops and in fruit."

### AUTUMN AMONG THE BEES.

WHAT an autumn! Bees in Somersetshire have been dying by thousands. Not a bee in my apiary would have been alive on this 20th of September if I had not liberally fed them. Most hives for a radius of many miles are gone, yet it surprises one to find that in some oases, as it were, in the midst of the general desert, honey has not only been stored but even taken in surplusage—lucky-bee owners, who may make a small fortune next spring and summer by sale of swarms and stocks if there be any persons sufficiently sanguine to try their luck once more.

Since I last reported the state of my apiary the sugar supplied to my eleven stocks has reached the large amount of 195 lbs., or somewhere between 300 lbs. or 350 lbs. of syrup. I am glad to observe all hives save one (which does not seem to have a very active queen) largely increased in population, of course owing to the stimulus given by the feeding. I observe also that the young bees which have been emerging daily from the cells have already made large gaps in the syrup stored in the open unsealed combs. This is all well in view of the hoped-for renewal of activity when the ivy season comes on. Then a sufficiency of cells will be free for egg-laying and the storing of pollen during the three weeks it usually lasts, after which a small further supply of syrup will be given them before the hives are finally made up for winter, in order that they may have it at hand in the centre of the hive. This last dose of syrup will be thicker and made more stimulating by the addition of a little vinegar and brandy, the brandy as a stimulant, and the vinegar to prevent crystallisation. Some of my neighbours, bee-keepers too, laugh when I tell them of my outlay. Yet what is it? 4s. 6d. per hive, or even 5s., is worth laying out surely to save a valuable stock of bees which in April next may be worth from £2 2s. upwards.

In feeding my bees I found that some of the swarms were at first disposed to make new combs pretty extensively (all worker, as usual, at this time of year), but after a time they preferred to lengthen out the cells even of the outermost combs. This I explain, not as arising out of any foresight of the close of the season, but because the population was for a time continuously decreasing in some hives at a formidable rate every day, and the bees were hardly numerous enough to keep up the necessary heat required for extended comb-building. If I were to feed them now they would doubtless recommence this work, owing to the large increase in their numbers to which I have alluded. In some hives with bar frames I tried them with comb foundation, but found them unwilling to use it. I attribute this partly to the same cause—the want of population. In summer—when the hives were full of bees and eager for room, especially when honey was to be had—they took kindly to them. But the year has been altogether against scientific bee management, and yet but for this how few of our stocks would now be in existence?—B. & W.

### OUR LETTER BOX.

**WEAK DUCKLING (Jane A.).**—Put a crystal or two of green vitriol (sulphate of iron) into the bird's drinking water.

**PRESERVING EGGS (Constant Reader).**—Employ eggs quite fresh, paint them with linseed oil, then place them in lime. We generally use a glazed breadpan. The bottom should be covered with slaked lime wetted to a consistency that will allow anything put in it to stand upright. The bottom layers of lime will be 2 inches thick. The eggs are stuck in this small end downwards close together, but not touching. When the bottom layer is full, then a fresh mixture of slaked lime is poured till thick enough for the eggs to stand up in it, and so on till the pan is full. The eggs should be perfectly sound in shell, not cracked or in any way injured, and they must not touch each other. We have had eggs that have been kept twelve months, and then perfectly fit for any culinary purpose.

**CANARY CAGES INFESTED WITH RED MITES (E. W.).**—The red mites are very troublesome to keep in check, for they not only infest the cages the birds inhabit, but secrete themselves in every available place and crevice in the cages and wall, and around the very nails or hooks upon which the cages hang. As to entirely getting rid of them is a matter we have not succeeded in. They will make their appearance in breeding seasons, sometimes more numerous than others, especially during a hot July. This year we have had very few indeed, and we attribute it more to the damp season than otherwise. Cleanliness holds red mites in check, and it is necessary where many birds are kept to have the partitions and cages thoroughly cleaned at least twice a year—spring and autumn. Small cages, which can be readily hauled about, may be oftener and more readily attended to; something more than a mere scraping-out of the refuse from the bottoms of the cages. The birds' households require occasional cleansing with scalding soda. Red mites accumulate in abundance during the summer months, especially in cages or partitions where birds are bred. At times clusters of them are to be found in and about the stale nests, and it is necessary that a sharp look-out be kept in disturbing their haunts in the crevices or ends of perches, which may be known by the diminutive grey or mouldy spots thereabouts. If your Canaries are kept in breeding partitions dress all the likely haunts of the vermin with

turpentine and train oil. It will kill where it reaches the mites. Turpentine itself will very quickly penetrate the slightest crevice; be careful and do not let the birds' feathers become soiled with the liquid. Use a small paint brush, and have at hand a cloth to wipe the cage. It will be better to remove the birds whilst operating. Use the liquid to the breeding partitions before taking it down to clean, especially if you have the vermin pretty thick about them. It will make short work of the mites and prevent them becoming scattered upon the floor when removing the fronts to cleanse. If your birds are in breeding cages remove them whilst cleaning. Dress the cages with the liquid, and the day after scald and wash them with soap and soda suds. Before placing your birds in clean cages wash them with soap and lukewarm water, rinsing well the soap out of the feathers, and drying with a very soft cloth, finishing the drying of the birds before the fire. It is at the decline of summer when Canaries suffer most from the red mites. At that time the vermin are strong and make sad havoc with the birds, which become weakly through the moulting sickness when the Canaries require all the blood and rest they are being robbed of. Do not use carbolic acid for cleaning your cages. You might destroy the birds and injure the wirework of the cages. Alum solution might be used with beneficial effect to wash the cages with, but when the crevices become dry the vermin will again take refuge therein, whereas the oil will prevent the vermin living in the crevices.

**LUCERNE (G. S. Ireland).**—Lucerne will be found too great a risk of being damaged by frost if sown in October; it is best sown in May under the directions as given in this Journal, May 22nd, 1879, page 388. On gravelly soil the land should be broken by the subsoil plough below the depth of ordinary ploughing, otherwise the roots of the plant cannot go down, and will not succeed.

**ANTS ABOUT HIVE (P. T. Dalton).**—The ants, attracted by your syrup bottle, feed at your expense, but this is the extent of the mischief, for they are powerless to injure the bees. You may by soaking a string in paraffin oil and tying a piece round each leg of the hive stand stop their visits pretty effectually; while placing each leg of the stand in a garden pot saucer of water will absolutely checkmate them, but many bees by this plan are likely to get drowned.

**CROPPING LAND (J. W. D.).**—If you could find a ready sale for lucerne you may grow it with profit in the following manner:—Plough and press the present oat eddish, sow 3 cwt. Peruvian guano, or 4 cwt. dissolved bones per acre, and three bushels of rye immediately after the presser, then work it in together by the harrows, and in the spring sow 90 lbs. per acre of lucerne seed, and drag or harrow the land sufficient to bury the seed. The crop of lucerne would be ready to cut several times the next year. If there is no sale for lucerne as green fodder, then plough and sow the oat eddish next spring with four bushels of early field peas per acre, drilled 14 inches apart, and sow behind the drill the same dressing as above stated and harrow in. The land will then, if clean, be in good order for a crop of wheat or barley. The next year, if not clean, make an autumn fallow after the peas are off.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.						Rain.
1879. Sept.	Baromet- er at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
We. 17	Inches.	deg.	deg.	E.N.E.	deg.	deg.	deg.	deg.	deg.	In.	
Th. 18	29.949	59.7	58.1	N.	57.5	67.1	56.0	86.0	53.7	0.010	
Fri. 19	29.945	59.9	59.3	N.	58.0	66.5	57.1	84.1	57.9	—	
Sat. 20	30.110	61.7	59.3	N.	58.3	67.5	57.3	86.9	56.4	—	
Sun. 21	30.123	58.4	57.1	S.W.	58.2	68.7	56.6	102.1	56.9	—	
Sun. 21	30.061	57.6	53.6	S.W.	57.3	64.1	52.1	97.3	50.0	—	
Mo. 22	29.912	55.1	51.1	W.N.W.	57.0	62.5	45.3	115.0	41.9	0.260	
Tu. 23	29.564	55.9	55.1	S.S.W.	56.1	62.0	50.9	77.3	46.3	1.400	
Means	29.932	58.3	56.3		57.5	65.5	53.5	94.3	50.9	1.763	

### REMARKS.

- 17th.—Rather dull day, but on the whole fair; dull evening; slight rain in night.  
18th.—Slight drizzle in morning; fair afternoon and evening.  
19th.—Rather dull morning, very slight shower in middle of the day; fine afternoon, with a little sunshine.  
20th.—Cloudy morning; fine bright afternoon; rather overcast at night.  
21st.—Generally overcast but fair; slight shower about 10 P.M.  
22nd.—Beautifully fine day throughout, but rather cool; stormy wind in night.  
23rd.—Miscrably wet all day, except for a short interval in the morning, when there was a glimpse of sunshine; stormy with heavy rain in night.

Mean of barometric readings above that of last week, and also most of the thermometric means are higher than last week, the exceptions being the maximum temperature in sun and in shade, which are rather lower. There has not been much sunshine during the week, but we have had on the whole fair autumnal weather.—G. J. SYMONS.

### COVENT GARDEN MARKET.—SEPTEMBER 24.

VERY little alteration to quote this week. Supplies somewhat falling off with a quiet trade.

### FRUIT.

	s. d.	s. d.		s. d.	s. d.			
Apples.....	½ sieve	2 to 3	6	Nectarines ....	dozen 4 0 to 12 0			
Apricots.....	dozen	2	0	3	Oranges .....	½ 100 4 0 to 12 0		
Cherries.....	box	0	0	0	Peaches .....	dozen 4 0 15 0		
Chestnuts.....	bushel	12	0	16	Pears, Kitchen..	dozen 0 0 0		
Figs.....	dozen	1	6	3	de-sect. Apples	dozen 2 0 0		
Filberts.....	½ lb.	0	7	0	Pine Apples .....	½ lb. 3 0 0		
Gobs.....	½ lb.	0	7	1	0	Plums .....	½ sieve 3 0 0	
Gooseberries...	½ sieve	0	0	0	0	Ra-berries .....	½ lb. 0 3 0 0	
Grapes, hothouse	½ lb.	1	6	4	0	Walnuts .....	bushel 0 0 0	
Lemons.....	½	100	8	12	0	ditto .....	½ 100 0 0 0	
Melons.....	each	2	0	5	0			



## WEEKLY CALENDAR.

Day of Month	Day of Week	OCTOBER 2-8, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.		
2	TH		64.4	58.9	54.1	6 4	5 35	5 48	8 26	16	10 35	275				
3	F		63.7	41.5	52.6	6 5	5 33	6 12	9 36	17	10 54	276				
4	S		63.7	42.4	53.1	6 7	5 31	6 42	10 45	18	11 12	277				
5	SUN	17 SUNDAY AFTER TRINITY.	60.5	40.3	50.4	6 9	5 29	7 20	11 48	19	11 30	278				
6	M		61.8	42.2	52.5	6 10	5 26	8 6	0 43	20	11 48	279				
7	TU	Annual Meeting of the Scottish Arboricultural Society.	63.7	48.4	58.6	6 12	5 24	9 7	1 28	21	12 5	280				
8	W		61.7	42.0	51.8	6 14	5 22	10 14	2 5	(	12 22	281				
From observations taken near London during forty-three years, the average day temperature of the week is 62.8°; and its night temperature 42.4°.																

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## NOTES ON PEACH TREES.

**R**EPARATIONS will now be necessary where very early forcing of the Peach is carried out. The leaves of the trees in the early house will be falling fast, an indication that the pruning and cleaning season will shortly be at hand. This work should always be attended to at the first opportunity after the foliage has fallen. Cleaning the house is an important point, especially if it is infested with mealy bug. Too little importance is often attached to this operation, and if the woodwork appears clean washing is considered unnecessary. Whether the house requires painting or not is best determined by each cultivator; if it is infested with bug we strongly recommend the application of paraffin, which has already had its properties as a sure killer of that insect advanced in the Journal. For eradicating bug it is certainly preferable to painting. Even if the house should need painting afterwards and bug exists, by all means wash the woodwork and every part of the wire trellis first with pure paraffin. The odour, which may be objectionable, will not remain long, as it is very volatile, and will not injure the most delicate plant. The walls must be washed with spirits of salts diluted with water, care being taken that the mixture does not come in contact with the trees. The trees should next be washed, at least the old wood, with paraffin diluted with water; a safe recipe will be found in Mr. William Taylor's article on page 146. The house and the trees being cleaned, the surface soil must be removed and replaced with fresh soil. If no insects exist the house can be cleaned in the ordinary way. We see no advantage in painting the trees with a mixture of clay, soot, lime, &c., which is frequently done; it is soon washed off when syringing commences, and only settles on the downy skin of the Peach. Soft soap or Gishurst compound will answer the purpose as well as the paint referred to.

It is unnecessary to describe numerous varieties of Peaches, as the best are so well known both for early as well as for general purposes. Lord Napier Nectarine is well spoken of for the early house by those who have fruited it. The old Brugnion Nectarine (syn. Red Roman) is a good reliable variety for early work; it stands forcing well. The fruit is of fair size and good colour when ripe. It does not appear to be grown so much as it deserves.

**LIFTING PEACH TREES.**—Concerning this there exists a variety of opinions; nevertheless the one we advocate will, if carried out according to our instructions, reward the cultivator with a full crop of fruit from his trees the following year, provided the wood is well ripened and the buds plump. When to all appearance the trees are in good condition it becomes necessary at times to lift them for the purpose of renovating the borders and to check over-luxuriance. Lifting is not only beneficial for the purpose of making the trees more fruitful, but it induces the production of healthy fibrous roots. When transplanted at the proper season the trees start freely into growth when required to do so, and give no indications of having suffered

by the operation they have undergone. We prefer lifting Peach trees in the autumn. It would be difficult to set a fixed time, as that entirely depends upon the time the wood becomes sufficiently ripe and the buds matured; this work should be done, however, at least a month before the leaves commence falling. If lifted carefully the trees will not shed their leaves prematurely. The trees soon commence producing roots if they are well syringed and the house is kept close for a few days: under this treatment the trees start earlier into growth than when spring-lifting is resorted to. Trees lifted in a dormant state have not the chance to produce roots and become partially established before they are to be started into growth. We have frequently seen trees lifted in a dormant state showing signs of injury in the spring; in many cases the flowers do not properly develop and are unfit for perfect fertilisation, and the fruit either falls in a small state or before the stoning period is over, and in some instances after being started the flower buds fall. We do not wish to say that trees under the latter mode of lifting always present such results as we have described, because it depends to a great extent upon the time the trees have remained undisturbed at the root, and the condition of health the tree is in at the time of lifting. If the trees are old and declining in health, or the roots of younger trees are long and fibreless, they cannot make that rapid progress that they would do under the early-lifting system. They not only make abundance of fresh rootlets before the foliage falls, but are well able to produce strong and thoroughly developed blooms and to carry a crop of fine fruits. We have perceived a marked difference between trees of the same size and same variety, the one lifted in a dormant state and the other when carrying healthy foliage, the latter ripening the fruit fully a fortnight earlier than the former. We have already done all the lifting necessary in our Peach houses, and find the earliest-moved trees have made a quantity of fresh roots.

**SOIL AND BORDERS.**—In case the borders require to be renewed it will be necessary to select some good fibry loam of rather a strong texture. Too frequently do we see soil used for Peaches and Nectarines of a light and sandy nature, which encourages gross useless wood that will neither ripen nor bear fruit satisfactorily. In this kind of soil the roots ramble away through the border with great freedom, and require to be much more frequently lifted, and the trees are more susceptible to the attacks of red spider and mildew than when grown in soil of a heavier nature. Experience teaches us that better roots and fruit will be produced by trees planted in rather heavy soil. It is sometimes difficult to obtain suitable soil for Peach borders, especially in the immediate vicinity of large towns. This can to a large extent be remedied by adding clay in proportion as the loam is light, which is in the best possible condition for incorporating with soil if previously exposed to frost until it has fallen to pieces, and then stored in readiness. If, on the other hand, the soil is too heavy, lime rubbish, charcoal, and wood ashes can be mixed with it. Should the loam be such as Peaches delight in, no additions will be necessary. It is, in our opinion, a serious mistake to add large quantities of manure to the soil for Peaches and

Nectarines. Bones are preferable, but even these are unnecessary. Manure encourages the tree to make coarse sappy wood. Further, we have concluded that manure coming in direct contact with the roots causes to a large extent the production of suckers.

Old trees that have been established in borders for a number of years and have borne good or moderate crops of fruit will deteriorate when the border does not contain that nourishment for the support of the trees it formerly did. Each year the trees have less food to consume, except what may be given in the form of top-dressings or liquid manure, which in the end prove insufficient. The old trees become less vigorous, declining each year in health, and at last have to be pulled out. To save this rooting-out, at the first symptoms of decline the roots should be examined and the border renewed; the trees will, if not too far gone, quickly recover, and produce good crops for several years afterwards. If old trees become thoroughly injured through careless treatment and they commence to decay near the pith no after treatment will restore them. This can be perceived as soon as the trees commence growth by the silvery cast the foliage presents, and in many instances the first leaves turn yellow and fall off. Replanting with fresh trees is then the only course that can be adopted.

Turning again to Peach borders, we cannot see the use of such deep and large borders as are generally made. The border, of course, must depend entirely upon the size of the trellis the trees have to cover. Making large borders inside and out is an unnecessary expense and trouble. If deemed prudent to have the roots inside there is in most cases sufficient room, and often more than is needed, without making large borders outside as well. We find borders 18 inches deep ample whether inside or out, and rather than make large borders we would lift the trees periodically and renew small borders when the soil becomes exhausted.—W. BARDNEY.

#### HARDY PERENNIALS.

WHATEVER have been the failures, and they have been many this season in the flower garden, the established hardy perennial plants may be pointed to as having been eminently successful. True, they are a little behind their usual time of flowering, but when they do come they are just as bright and equally as floriferous as in an ordinary season; in fact, when contrasted with the rest of the flower garden they look brighter and more beautiful than ever they did, and I believe they have gained substantial ground in the estimation of the public. For those who contemplate growing these interesting plants now is a good time to make preparations for a beginning; and as there is, if success is to be secured, a great deal to be thought of and more to be done, I would advise that there be no delay, at least in the thinking part of the business; and as many people will feel a relief in getting rid of their unsatisfactory summer bedding, there need not be much hesitation about clearing it out of the way at once, and so get rid of an eyesore and commence with fresh interest and new ideas. But there must be no half-and-half sort of work. Perennial plants with a few exceptions do not look well in formal beds. It will not do to merely clear away *Alternantheras*, &c., and plant a *Michaelmas Daisy* or an *Evening Primrose* in their places. Keep some of the formal beds if you will; if they look dingy and unsatisfactory this year, they have looked bright and have had many admirers before, although there is no doubt we have had too much of them both in point of taste and convenience. There is no objection to the perennials taking the place in our hearts which the ephemeral carpet-bedders have for a time monopolised, but they must not be substituted for them in the middle of the lawn; their general position requires to be determined by a true artist, so that they may add to the beauty of the landscape, instead of being a blot on it as many of the formal beds undoubtedly are. It is more than probable that our taste would improve in such matters if we were favoured with brighter skies and warmer air; but in the general dullness and the almost superabundance of foliage surrounding our country houses a bit of bright colour is cheering, and very often general effect is sacrificed for a local whim.

The site being determined on for a patch of miscellaneous hardy perennials it must have a background of shrubs, and, indeed, the spot likely to be selected is almost certain to have shrubs on one side of it if the grounds have been tastefully planned. Straight outlines should, I think, be avoided as much as possible, although in my own case they are straight on both sides; but I have the advantage of a good belt of

shrubs, mostly *Rhododendrons* of informal growth, at the back, and the front has pillars and arches covered with climbers not too closely kept, which answer the double purpose of joining the borders to a strictly geometrical garden and breaking the monotony of the straight lines. I should not of my own choice select this spot for hardy perennials, but it has its advantages, not the least of which is its comparative security from rough winds.

Soil and drainage are important items in growing these as well as all other plants. It is better, I think, to err rather on the side of lightness and porosity than the reverse, and it should not be over-rich with vegetable matter. Common garden soil will answer the purpose very well if it is moderately light; a good dose of lime will improve it if it is so rich in humus as to make slugs and worms troublesome. For those who have the choice there is nothing better than a good proportion of peat; and as I could have it for the carting, I took advantage of this and put a good spit of peat on the top of the border, and then dug it over, bringing the surface of the natural soil mostly to the top. Slugs and snails are the worst enemies of many of the choice herbaceous plants, and peat does not harbour them. Where peat is not easy to procure a quantity of gritty material should be used. The majority of the plants delight in soil which is not heavy; the few exceptions can have loamy soil added at the time of planting, and hardly any of them will survive in a soil which does not admit the water to pass freely through it. The ground being prepared, October is a very good time to plant some of the hardier species if they can be obtained in a suitable condition, they will then become established and make a little root growth before winter. Those which are puny or of doubtful hardiness had better be kept in pots, where they can be sheltered if necessary till spring. Where there are established plants to be divided, and which readily increase by division, autumn is the best time for many of them, and the length and habit of the herbaceous stems is a great guide for placing them in suitable positions. Many of them, as *Aconitum autumnale* and *Veronica virginica*, are of tall and slender growth and take but little lateral room; others are wide-spreading, as the Japanese *Anemones*, *Funkias*, and some of the *Oenotheras*, and will bear looking at all round; others, again, though growing rather tall when established need to be close to the eye for due appreciation, as *Tricyrtis hirta*.

All these and many other points press themselves on our notice when re-arranging plants in autumn, but some of them are liable to slip our memory during the winter. It is a difficult matter for even a practised hand to arrange a perennial border right off, so that the ground may be fairly covered without the plants being too much in lines or in other ways too stiff-looking. The known habit of the plant is then a great assistance in this part of the work, and every advantage should be taken of it. I must insist on perennial borders being strictly confined to perennials, not necessarily to herbaceous plants, but shrubs and half-hardy plants must be excluded. Those who recommend such barbarous mixtures cannot know much of the inexhaustible beauties of a collection of hardy perennials. If you complain of the flowers going off and leaving blank spaces, have the early-flowering plants in one part of your garden and the late-flowering plants in another, then if you only love them for their gay colours you need not visit them when these are absent.

There is one difficulty which I cannot dispose of satisfactorily with regard to these plants. I don't like to see hundreds of conspicuous labels, and yet I cannot do without them. I may know every plant by sight or position myself, but there are others who do not. So far I have used merely a piece of round stick with just enough of the bark scraped off to give room for the name, but even this is objectionable.—WILLIAM TAYLOR.

#### COMBINED CULTURE OF GRAPES AND PLANTS.

I HAVE thoroughly proved the fallacy of the assertion that Grapes and plants cannot be grown in the same house. I have cut, or shall cut, fifty bunches from one Vine in a small double span house—i.e., a house 25 by 16, in which I grow Zonal Pelargoniums, Begonias, and twenty other kinds of plants, and from four Vines planted only last year in a stove to occupy only one side of the house I have, or shall this year, gather about forty to forty-five bunches; yet I had no fire heat from May 1st to July 17th, and then only for a few days, again in August and now at nights; but as the house catches every ray

of light and sun and is never shaded the temperature often goes up to 80° in the daytime, and it gives wonderful colour and blooming qualities to plants. I fear, however, this is a twice-told statement. I may add that as I hear it is generally a bad season for Begonia seed, I am willing to supply seed at 2s. 6d. and 1s. a packet to those who apply before the middle of October. I am obliged to make a charge, as already, owing to notes about Strawberries, I have had fifteen applications for runners, besides promises made to intimate friends living near. The seed hybridised from the choicest sorts—*i.e.*, Sedeni, Vesuvius, Frobelli, Miniata, Kallista, Stella, besides from seedlings of my own selected from a great number. I limit myself to 150 packets.—C. P. PEACHE.

### THE PHLOX OF THE FLORIST.

THE present season, notable as it has been for the many failures with most out-of-door flowers, has been one especially favourable to the growth of the Phlox of the florist. Our selection of these has been in fine condition for weeks past, and the plants will continue with good weather in beauty for some weeks longer. I do not remember ever seeing Phloxes do better than those above alluded to, and the cultivation they have received was of the simplest character. It is just one year since the larger plants were planted, the newer and some of the older varieties on trial being planted in spring. The way these plants were managed was as follows:—The portion of the broad border they now occupy was cropped last summer with Peas and Cauliflowers, and when these were cleared off a mixture of manure from the stables and cowhouses was carted on and the ground turned over 30 inches deep, working the manure in as the work was proceeded with. In October some plants struck from cuttings eighteen months previously were lifted, the strongest divided and replanted in the border prepared as above. The stems were not cut down until they had decayed naturally, and to do this much of the strength displayed by the plants this season may reasonably be attributed. These old stems, worthless in one sense, as having bloomed at the same time, acted a very beneficial part in establishing the plants in their quarters before winter, and in producing stronger buds ready to start without any check in spring. When well started at the latter season the young growths were thinned out to from three to five of the strongest; numbers quite sufficient to ensure a display without deteriorating from the size of spike and quality of bloom from overcrowding. At the time of thinning the ground was also pointed over, and a further stock of young plants placed out, some from offsets and some from plants in pots; a little later on strong stakes, and 3 feet above ground, were placed to the plants, at the same time carrying a strand of matting loosely round each plant. Had the season been an ordinary one a surfacing of manure would have been given them at this time.

The routine work for the remainder of the season consists in tying loosely the growing shoots, and at the last if too crowded the weakest of the shoots may require cutting out. If any heads or spikes are wanted for exhibiting shading must be resorted to in order to keep the colours pure and the heads entire. Rain and sunshine, or even a dewy night followed by a sunny day, causes unprotected flowers to fade early, light shades to become dirty-looking, and darker shades to look streaky and wanting in purity of colour. There is no better mode of shading than extemporising glass covers with old sashes, but newspapers or calico may be made the most of where glass cannot be obtained. The plants can be lifted and potted and placed under glass, without any damage being done to either plant or flower provided that plenty of water is supplied. The Phlox is a most accommodating plant. In spring I had some offsets from a gardener. By the time these offsets were planted in the piece of ground beside the others they were looking most unsatisfactory, but notwithstanding I have some excellent heads of bloom developing just now on most of these. It proves to be a ready means of obtaining the early-flowering section at the same time as the late varieties; and as the lighter-coloured varieties in the early-flowering section are superior to those of the same shades in the late varieties this is a matter of some importance. The same end can be gained by striking cuttings in spring and growing and flowering them in pots, but this necessitates an extra amount of trouble.

Phlox cuttings can be struck successfully at any season of the year; the main point to be borne in mind is not to subject them to a heat sufficient to cause the shoots to draw up spindly. The spring season is the only time heat is required in order to

induce them to root freely. Plants in their second season produce the finest heads of bloom. After the third year's growth the plants will require dividing as previously directed. The names of varieties which are the finest at present in flower here are Chanzy, Princess Louise, Bryan Wynne, Coccinea, Souvenir de Berryer, David Syme, Andrew Borrowman, Madame Andry, Lothair, Mons. C. Turner, Roi des Blanchés, Thomas Ormiston, White Lady, Lady Middleton, John Baillie, Lilacina, Mrs. Hunter, and Lady Napier. Other desirable varieties are Mrs. Laing, Amabilis, Madame Moisset, Miss Macrae, D. P. Laird, Duchess of Athole, Perfection, Purple Emperor, and Mrs. Doig.

The directions given above have been intended for those desirous to obtain spikes for exhibition, but Phloxes are amongst the best late-flowering border plants in cultivation. In borders which have not been trenched for a number of years it is necessary to add a mixture of dung and loam to the soil. There is yet another use they may with great advantage be put to, and that is for the decoration of large conservatories. These may for this purpose be either grown from offsets or from cuttings in their second year. About five shoots to a plant are sufficient, and all sprayy growths must be removed from the plants. Pots 9 inches in diameter are a good size to grow them in, and a mixture of three parts loam to one of decayed manure a good soil. Liquid manure must be supplied them when the pots become filled with roots.—R. P. BROTHERSTON.

### DEFECTIVE VINE BORDERS.

THE season of 1879 will long be remembered for deficiently coloured Grapes, perfect colour being quite the exception amongst black varieties this year. Although the bunches and berries may be large, if colour is wanting more than half their attraction is absent, and although they may be very well flavoured they will fail to obtain that approbation at table which most gardeners desire. Want of colour in Grapes may, I think, be attributed to many causes. Sometimes the gardener may be to blame, very often not. No man would produce badly coloured fruit intentionally. Still there are mistakes in practice. Air is generally only admitted to vineries in any quantity when the sun is bright. There has been little of the latter this summer, and it is just possible that in many vineries where the fruit has not coloured ventilation may not have been efficiently attended to at the time when it was most required. If Grapes need fresh air to assist in colouring them in hot sunny weather, they need it equally as much in sunless weather. The best coloured Grapes we ever had was in a year noted for its want of sun, and the worst for colour we ever had was in an unusually bright season. In both cases air was admitted liberally, and in the dull season after colouring was commenced the ventilators were opened just as freely as if the sun had been shining.

I am of opinion that a deficiency of sun heat will seldom cause Grapes to fail in colouring, providing the atmosphere of the house is kept in a proper state to assist colouring during that period. Heavy cropping must be avoided, and the Vines should be in a fairly robust state of health, or the cause of not colouring must be looked for elsewhere. I am strongly inclined to think that imperfect borders have a great influence in causing Grapes to colour badly. In many instances I believe it is the sole cause, and now that we have seen the bottom of the border in which our Vines were growing, which failed to colour their fruit, we fully believe it was here the mischief rested. It is very well to give Vines plenty of water and to have abundance of roots in a rich surface dressing, but if the foundation of the border is not right deficient colour will be the result until this has been rectified.

We have secured fair crops of Grapes out of one of the vineries here for several years, but they have never been so vigorous as we desire; fresh top-dressings in which plenty of roots formed appeared to put a little extra life in them, but still they were backward and not much to be depended upon. At last we resolved to look to the border, and found it in as bad a state as could be conceived; drainage there appeared to be none, and the soil 2 feet or more from the surface was a barren stiff mass. This was entirely removed to about the depth of 3 feet, stones and ashes were placed in as drainage, and the whole filled up with loam mixed with limestone, road scrapings, and a good sprinkling of cowdung. In removing the soil it was not taken out indiscriminately, but after digging a trench along the front about 10 feet from the front lights the soil was worked away gradually with a fork, and all

the roots were laid back and preserved, but the few which were in the old soil were so destitute of fibres that most of them were cut back to 2 or 3 feet from the base of the stem. From these cuts many young rootlets will be emitted that will be of much more service to the Vines in good soil than the old ones were in bad. Perhaps it ought to be understood that these Vines were not wholly lifted, as a strip along the front of the house about 18 inches in width where the soil was sweeter and contained many roots was left without doing much to it. This will keep the Vines from sustaining any severe injury until the young roots have penetrated the new soil, and after that the old soil will be harmless. I may also state that these Vines were lately relieved of their fruit but still retain their foliage, and we hope that this will induce the young roots to find their way into the new soil before the winter, when they will be ready to help the Vines into growth next year.

For the above reasons we are of opinion the present is the best of all times to make alterations of this kind, and providing the soil was not entirely removed from the roots, as above indicated, we would just be as much inclined to treat Vines on which the fruit was hanging as those without it. Much cow or horse dung is not to be recommended for Vine borders as a rule, but I am of opinion that a little is necessary in renewing borders to give the old Vines a stimulant.—M.

#### CARNATIONS AND PICOTEEES.—No. 9.

As all plants will or should be layered by this time the only attendance they require will be to water the crowns from a rose when the soil is dry, otherwise the young roots of the layers near the surface are liable to suffer injury. I have generally noticed that plants which have to make second roots are frequently affected by canker. Prepare a compost for planting the layers in when rooted; that which I employ for this purpose is formed of three parts maiden soil—the top spit from a pasture will do—one part of burnt refuse, with a small quantity of leaf soil added. If the soil is very strong I add a quantity of sand, not otherwise. For single plants or two small layers I employ pots 3 inches in diameter;  $3\frac{1}{2}$ -inch pots being suitable for two large or three small layers. I run the soil through a half-inch riddle, carefully picking out all earthworms and wireworms.

Potting may be commenced at once, if done earlier it sometimes happens that the weather proves mild and the plants become root-bound. It is important that the drainage is good, placing a little fibre or a few half-decayed leaves over it in order to prevent the soil from running amongst the crocks. Clean the layers from all decayed foliage, making the cut when separated from the parent plant at the first joint below where the cut has been made when layering. If cut at a joint more roots will be formed during the winter months. Plant the layers near the inside edge of the pots, as the sooner the roots of the plants reach the side of the pot the better. Be sure to wash the pots and crocks before using them, and any new pots before being used should be well soaked in water. After being potted a gentle watering with a fine rose will be required, and then the plants may be placed in a frame facing east or west, closing the frame for a few days, after which time the plants may be left exposed, only protecting them from drenching rains.

At the end of October or first week in November they should be placed in their winter quarters. For this purpose I find frames about 5 or 6 feet wide with lights 3 feet to 3 feet 6 inches in width the best; the frames placed on a bed of ashes. Be careful when placing the pots in the frame to examine them carefully, as it will frequently happen that the slugs will make the hole in the bottom of the pot a residence. As many of the seed-pods will not be ripe when the layers are taken off it will be well to leave a shoot on the plants bearing pods to keep the sap moving. As the seed-pods ripen they should each one be rolled up in a piece of soft paper, otherwise the pods when full of seed are liable to burst, in which case the seed would become mixed. To show how necessary it is to keep a registry of the crosses, I may say that some few years ago I hybridised some plants for a friend of mine. Two very fine varieties bore a number of pods. The seed was sown in the usual way; there was a good stock of plants, but not one good variety amongst them. Had this occurred in mixed seed it would have been impossible to tell what variety had produced them; but knowing it by the registry will prevent me from using these varieties as seed-bearers again. Loosen

the stems of all the seed-bearing plants, remove the petals a few at a time, and pull off one of the segments of the calyx so that the wet may not lodge there.

**Plants in Beds.**—Layering amongst these ought to be completed; any stools which have not been layered, if intended to stand for another year should have the old leaves trimmed off the shoots as if for layering, pegged down, and covered with soil, pressing it firmly amongst the shoots. It is a good practice to give the plants a watering with lime water, which will generally expel the worms from the roots. Plants or stools can be removed now, whilst beds of new layers can be planted where required. The best plan is to plant them 18 inches from row to row, and 12 inches apart in the rows; in this manner two rows form a bed say 3 feet 6 inches wide, which is very convenient for weeding, watering, layering, &c.

**Seedlings.**—Potting should be finished at once. Place them in pots the same as layers, wintering them in frames in the usual way. Where seedlings are intended to be planted in the open a crop of Potatoes or Carrots should have been grown, as they bring away with them the Carnation's great enemy the wireworm. If the soil has been manured it will not be necessary to manure it again, but dig it deeply, breaking the soil fine, and if light adding to it road-scrappings or anything of that kind; whilst if strong some burnt rubbish may be added. Be particular in looking out for slugs, as they are very destructive at this time both amongst seedlings and layers when planted in the ground; they eat out the pith where the cut has been made. Any plants which may have lost their centres should be examined carefully for the rose-borer, which in some situations is very destructive, boring as they do right down the centre of the plant. Destroy them whenever found.—GEORGE RUDD.

#### THE ASSOCIATION HORTICOLE LYONNAISE.

HAVING been frequently invited to act as a member of the Jury at the great autumn Show of the Association Horticole Lyonnaise at Lyons, I this year accepted the invitation, and was much pleased with what I saw. The Exhibition took place on the 11th, 12th, 13th, 14th, and 15th September in the Place Maraud, one of the public squares on the banks of the Rhone, and was partly under canvas and partly in the open air, the square being enclosed by a cheap fence for the occasion. One thing struck me on entering the show ground—namely, the small expenses incurred in producing the exhibits and in the getting-up of the Show. It is true that many of the plants were small in comparison with what we see at our English shows, but I should hardly like to say that there was less skill displayed in their cultivation; for although they did not represent extraordinary horticulture as many of our exhibits do, they were in every way satisfactory as examples of ordinary horticulture. There were quantities of Palms, Caladiums, Coleus, Fuchsias, Geraniums, and other greenhouse plants, not large but unexceptional in point of quality; also Dahlias, Phloxes, Carnations, and Pyrethrums among out-of-door plants, and indeed almost every flower of the season that is recognised and grown in English gardens. There were also fine collections of Conifers, and Hollies were better than we had ever before seen them in France.

Among fruits the Pears were numerous and fine, the Apples less numerous and poor. I have always thought that France is a long way behind us in the Apples, and this exhibition confirmed that opinion. There were two seedling Pears exhibited which so far as one could judge by appearances seemed fruit of great promise; the one named Notaire Lepin, something of the shape of Beurré Diel, said to be in season from January to March, and the other Notaire Bonnafond, nearer in character to Louise Bonne of Jersey, ripening from December to February. There were also other novelties among Pears, but such were of less striking appearance. One seedling Peach, Victoria Thorine, which might be compared to a very fine Gallande, looked very tempting. The collections of vegetables and salads were of the very first order.

Cut specimens of hardy flowering shrubs and herbaceous plants were also numerous and exceedingly interesting from the tasteful manner in which they were arranged. The cut Roses were a leading feature of the Show, and I was much pleased with the display. It would serve no useful purpose that I can see to compare their exhibits under this head with ours; it would be like comparing prize cattle with cattle fed for domestic use. As before said, they go in for ordinary, we for extraordinary horticulture, but there is as much difference in point of skill in cultivation and taste in the arrangement of the competing collections with them as with us. One small collection of Roses occupying a semicircular raised stage was composed of good ordinary flowers such as any industrious and skilful cultivator could produce without straining or lavish expenditure, and they were moreover arranged with exquisite taste. I looked again and again with intense satisfaction on this group. The other exhibits were, however, equally worthy of inspection, some containing a greater

number of flowers of equal merit. The whole were out with long stalks, the expanded flowers being surrounded with a profusion of buds, and now sheltering behind, now resting among, and anon rising above the beautiful masses of foliage. Although the flowers were not nearly so large as those met with at our flower shows, there was the charm of Nature about them which vividly impressed me. All the leading varieties were abundantly represented from the tiny *Lawrenceana* and *Polyantha* (the latter with too many buds on a stem to be counted), to the huge *Paul Neyron* and the single *Rugosa rubra*, with its large round petals and bright scarlet hoods. The *polyantha paquerette* is indeed a tiny gem, the flowers not larger than those of the *White Banksian*, which indeed it resembles, and is perhaps even more exquisite in outline and arrangement of the petals. Tea-scented *Roses* were abundant and of excellent quality. There were also numerous seedlings, but these were not named. *Mons. Levet* showed five seedlings; No. 1 a good copper-coloured *Rose*, and No. 2 a fawn-coloured variety, both tea-scented, were in my opinion novel in colour and of good quality. *M. Lacharme* showed a seedling between *Victor Verdier* and *Sombreuil*, something in the way of *Capitaine Christy*, which struck me as good, sufficiently distinct, and of vigorous habit. *M. Schwartz* produced three seedlings all Hybrid *Perpetuals*. One, apparently the best of the three, was in the way of *Elise Boille*; the next in order of merit bearing some resemblance to *Antoine Ducher*; and the third a pretty pale pink variety of very exact form. There was also a prettily tinted tea-scented seedling, not over-double, from *MM. Rambaux* and *Dubreuil Geure*, marked No. 1.

The tent in which the *Roses* were shown was better ventilated than our tents generally are, in fact it was open on one side; and I thought this an improvement, for the flowers remained fresh for a long time, and the odour was not the odour of a stuffy tent, but the natural odour of a *Rose* garden, and as we stood admiring we were continually refreshed by the breezes from the rippling Rhone. The banquet in the evening of the first day of the Show was a very spirited meeting, and of our many visits to Lyons this one left on us the strongest impression of the industry, ingenuity, and skill of the horticulturists of that part of France.—*WILLIAM PAUL, Paul's Nursery, Waltham Cross.*

#### WINTERING DAHLIA TUBERS.

LAST winter our *Dahlia* tubers were covered up very carefully on account of the severe weather, and, with the exception of one tuber, the entire stock was lost. It was not the care taken to have them perfectly secure that caused the loss, but oversight with regard to the covering. As a preservative as much of the soil as adheres to the tubers when lifted is allowed to remain on them, merely allowing it to become dry before covering them up. The material used for covering is straw, and though I have no doubt now that the *Dahlias* would have been safe enough with the amount at first placed over them, as seed *Potatoes* in the same shed wintered safely, still to make sure a very thick covering of straw was added. By this no doubt the *Dahlias* were destroyed, for when examining the stock at the end of January or beginning of February a white mould was found enveloping them, caused by the added straw being slightly damp; at least this is the only apparent reason. Nothing better than a covering of dry straw can be had for preserving the tubers, and we send this warning for others to ascertain that the straw is dry, more particularly when it is placed thickly over them. Cocoa-nut-fibre refuse where it can be easily procured is a good material for packing and preserving them in. Of course it is necessary to lift the tubers before frost injures them, and to dry them somewhat before placing in their winter quarters, otherwise no amount of after care will preserve the stock.—*R. P. BROTHERSTON.*

**MORE FOOD AT LESS COST.**—A manual on this subject has been published by *Ellis Lever* of London and Manchester. The author is *Mr. Leo Hartley Grindon*, and the subject was suggested by *Mr. Gladstone* in his speech delivered at Hawarden on August 28th. The pamphlet is admirably written throughout, and has reference to cottage and window gardening; vegetable and animal food, its cost and production at home and abroad; farms and cereal crops, Covent Garden and Columbia Markets, sewage, cookery, and co-operative farming. The benefits of cottage gardening are thus referred to:—"Working men who are encouraged to practise horticulture for their own sakes and own advantage, both as to pleasure and money profit, do most certainly acquire reputable and exemplary habits such as no other twofold occupation—business and pleasure going together—can ever stimulate and develop so well. They learn the unspeakable value of what many people call by the shameful name of 'idle time.' Spare

pence are laid out in seeds and plants instead of unnecessary drink; and a love of simple and healthy recreation with the spade and rake displaces all care for the hurtful and often brutalising sports which are so frequently resorted to, not so much from deliberate choice or natural inclination as through want of help towards a rational pastime. For sports, indeed, of a mean and brutalising character the gardener has never either leisure or disposition. Explain the matter in any way you like, the fact remains that the appearance before the magistrates of a working gardener—one who gardens for himself and in his own right—is well known to be quite a phenomenon." And on the subject of flowers in hospitals and infirmaries we cite the following:—"Give the poor occupants of these weary sick beds bread and medicine by all means, benedictions too if inclined that way, but give them some flowers as well. The surest way to induce the poor to believe that they have a 'Father in Heaven' is to let them discover in the first place that they have brothers and sisters upon earth. That 'flower missions' to hospitals have for some time been zealously and successfully at work we are well aware; but ask of those who superintend and manage, and they will tell you that their want is not opportunity to carry out their pious designs but more flowers wherewith to effectuate them." The manual is well worth reading.

#### MESSRS. SUTTONS' POTATOES.

I AM not aware if it is generally known, but it certainly should be, that there are three varieties of *Potatoes* bearing *Messrs. Suttons'* name that are freer from disease than any other varieties that I am acquainted with—viz., *Suttons' Redskin Flourball*, *Suttons' Magnum Bonum*, and *Suttons' Woodstock Kidney*. Perhaps there never was a better season than this for indicating the weak points of *Potatoes*. Unfortunately the disease has been prevalent in all parts of the country, the result being that many that were considered good varieties are nearly lost. This has been the case here, and according to the papers elsewhere also; therefore those varieties which have suffered the least deserve to be noted. On this account too much cannot be said in favour of the three named above, as they are all nearly disease-proof. I am judging them on their own merits, as well as comparing them with over five dozen other varieties grown here this season.

About the middle of June we found many diseased tubers amongst the early kidneys. By the middle of July many varieties were badly spotted on the leaves, and as some of the early varieties were beginning to indicate ripeness in the haulm many of them were taken up with the hope of saving them, and some very fine tubers were taken up without spot or blemish; but although they were dried and stored in a suitable place many rotted when they appeared perfectly safe. As is generally the case the best went first; notably *Red Emperor*, *International Kidney*, *Blanchard*, and many others of equally fine appearance, and all have suffered more or less in the ground or out, but the three under notice were perfectly sound in both places. *Redskin Flourball* probably may become diseased in some localities, but it is not so here in the garden nor in a field close by, where some fine sound tubers were lifted the other day.

*Magnum Bonum* is well known to be free from disease in nearly all places, and in this respect it has surpassed the *Scotch Champion* here, which is said to be wholly free from disease. Many of the American varieties are said to be wonderfully free from disease in their general character, but none of them have resisted it so well as *Magnum Bonum*; and the same remarks apply to *Woodstock Kidney*, which is of the greatest importance, as it is such a handsome variety, quite equalling in this respect *International Kidney*, and when boiled it is much superior to that. In future these three *Potatoes* will be largely grown here, as they are good in quality, heavy croppers, and last, but not least, disease-resisting.—*A KITCHEN GARDENER.*

#### ROSE CATALOGUES.

THE autumnal flight of these is just setting in. They are more interesting I think every year, and certainly deserve more study than they mostly meet with. The yearly preparation must be a work of considerable labour. It is told by, not of, a very famous catalogue maker—note the distinction for fear he should charge me with libel—that about this period the involuntary author retires from public life; a white glove is on the knocker, and until the printer is done with there is only one



answer to all inquirers, He is "as well as can be expected!" I have just had the benefit of a catalogue from across the water. It is interesting to notice the difference. The blending of business with information is very graceful. And first of all there is a charming little bit of true homage, "Vivat Regina!" It is quite the echo of our National Rose Society's motto, "What elegance of form, what fineness of colour, what (I fear not now always) delightfulness of odour!" "The Rose is of all the ages, of all the ranks. She queens it in all the gardens, she forces us to love her, she chooses to be loved, and she is loved with love indeed; her admirers are the most constant of all the lovers of horticulture!" Then follows a little bit of advice to M.M. the amateurs. I do know that I quite agree with it, at least in order to carry it out Roses should be few or gardeners many. As a protection against the frost it is suggested that the earth should be heaped up high round each individual Rose, and an earth bank made the protector. The subject is important in the likelihood of a hard winter. I should rather say, Manure well, and then add as much fern or such like as you choose on the top of it. November is shown to be the month of months for transplanting; and if this be not done till spring frequent waterings are stated to be probably required. I notice amongst the names a growing tendency, very advisedly, to give also the synonyms—e.g., *Jaune de Fortune*, synonym *Beauté de Glazenwood*. It is to be hoped this will help to keep the catalogues clearer. But still, O Belle France! do not you think you could shorten? Two names ought to be enough for any Rose, and one for preference, not as now those endless souvenirs. The cover, as might be expected, is of the most *récherché* Rose, and if this meets the eye of Mons. L. B. Guillot fils, I beg to make him my profound acknowledgments.—A. C.

### THE LONDON PARKS.

#### VICTORIA PARK.

FOR some years past the different styles of bedding have been here most admirably carried out, and the park has acquired, under the able management of Mr. McIntyre, considerable reputation in the horticultural world. The same care and taste are evident in the arrangements and designs this year, but unfortunately the effects of the dull wet season are only too apparent in the stunted growth and flowerless condition of many plants, thus giving a dreary unfinished appearance to beds that are usually so bright. This is by no means surprising, especially when we consider that the position of this park is one that even in the most favourable weather is far from being well adapted to the health of plants, surrounded as it is by an atmosphere loaded with poisonous vapours from numerous factories. But notwithstanding these disadvantages several beds were noteworthy for their elegance and brightness, and this was particularly the case in the principal flower garden. Most of the long beds at the back were planted with *Pelargoniums* and edged with *Echeverias*, while those in front were occupied with the various plants employed in carpet designs. One long bed of *Centaurea ragusina* and *Verbena venosa* was especially attractive, and another equally good had a centre of *Ageratum* margined with *Centaureas*, the colours in both instances forming a most agreeable contrast. Of the front beds one near the outer side was very pretty; it was edged with two rows of *Echeverias*, the groundwork being composed of *Mentha Pulegium gibraltarica*; in the centre a portion was raised, also edged with *Echeverias*; and on this was a design in *Alternantheras* and *Pyrethrums*, relieved by a few single specimens of *Echeveria metallica*, *Sempervivum*, &c. Near the above is a long herbaceous border, in which the showy *Tritoma Uvaria* is largely planted, intermixed with *Helianthus*, *Phloxes*, *Dahlias*, *Veronicas*, *Tagetes*, *Tropeolums*, *Pelargoniums*, &c., the general effect being bright and pleasing, as indeed this form of bedding is almost invariably.

Of the carpet designs in the sheltered portion of the park devoted to them the most noticeable were the following:—A circle edged with *Echeverias*, the ground of *Herniaria glabra*, in which was a central star of *Mesembryanthemum cordifolium variegatum*, *Alternanthera amœna*, and *Golden Feverfew*. A six-lobed bed was margined with *Pyrethrum*, and contained small designs of *Alternanthera amœna* and *Echeverias* in a ground of *Mentha*. The long scroll bed had a margin of *Echeverias*, a ground of *Mentha*, and a series of small raised panels of *Alternanthera amœna*, *A. versicolor*, and *A. paronychioides major*, edged with *Echeverias*. Pretty, but the designs, we think, were too small. The subtropical plants

were generally rather weak and stunted, although one bed of *Wigandia caracasana* edged with *Amaranthus melancholicus ruber* was well filled, and the plants moderately vigorous. *Ficus*, *Cannas*, and *Bicinus* were also extensively planted, and some of the latter were in fair condition.

#### REGENT'S PARK.

Here we also found the ill effects of bad weather paramount, in this case aggravated by the shade of the trees which constitute the avenue leading across the park. *Pelargoniums* presented a most dreary flowerless appearance, and only a few beds planted with carpet designs were at all bright and pleasing. One of the latter, a circle, contained a central specimen *Cordylina*, surrounded by *Alternanthera paronychioides major*, clusters of *Sedum glaucum* and *Mentha*, in the centre of which were plants of *Chamaeopence diacantha* and clumps of the charming *Nertera depressa* covered with its pretty little orange-coloured berries. This bed was attractive and tasteful in design. The oblique parallel beds were planted with *Centaurea ragusina* in the centre, next a row of *Viola Tory*, a good dark purple, followed by *Coleus Verschaffelti*, *Pelargonium Gold Leaf*, *Alternanthera magnifica*, and *Antennaria tomentosa*. *Lobelias* appear to have succeeded pretty well here this season, for they were flowering most profusely at the time of our visit. The two best varieties there were *Emperor William* and *pumila magnifica*, both with good coloured flowers and similar in habit.—L. C.

### STRAWBERRY FORCING.

I beg to remind Mr. Bardney that the points under discussion between him and me do not relate to the practice of divesting the runners from the plants and nursing them in frames, as he now seeks to make it appear, but to layering in 3-inch pots *versus* layering in the fruiting pots. Does Mr. Bardney now repudiate what he stated in a leading article at page 1? In that article he states that the system of layering in the fruiting pots is not only superior to the plan of severing the runners from the parent plants and nursing them in frames, but also to "layering in small pots;" and he goes on to explain that "the plants are, among other advantages, less liable to the attacks of red spider than when subject to the ordeal of drying two or three times a day, as is the case when layered in small pots," quite ignoring the fact that all good cultivators plunge the small pots in the soil previous to layering, and do not find it necessary to water more than once or twice a week. If Mr. Bardney has a plan of his own to recommend he need not exaggerate the difficulties of his neighbours' practice. If he withdraws the above statements regarding layering in small pots the dispute between us is at an end. As to Mr. Thomson's practice, I merely mentioned it to afford Mr. Bardney an instance he seemed to desire, and now having got it he refrains from discussing the matter any further.—FORCER.

[Good Strawberries can be grown by both the modes alluded to. "FORCER" we know can grow them well according to the system he advocates, and Mr. Bardney can grow them equally well by layering the runners in fruiting pots. We have seen Mr. Bardney's plants, which are very fine.—EDG.]

DURING the past four years, not having accommodation to raise a sufficient stock of plants in the usual way for forcing, I adopted the following plan and found it answer admirably. When the plants have fruited they are hardened off for a short time, and then are turned out of the pots and plunged in a bed of thoroughly decomposed material, such as an old hotbed or one composed of leaf soil, &c., where in a short time the plants will produce vigorous runners, which when pegged down root freely and in a short time make very strong crowns. They are then raised and placed in the fruiting pots, the compost consisting of one-half good strong loam, one-fourth decayed cow manure with crushed bones, the remaining part soot and coarse sand; the plants are then placed in a frame for a short time and kept close. In two weeks the lights are removed, the plants being well established. I have found no plan so inexpensive and so successful as this, for the old stools can be utilised when the young plants are removed and can be planted out in the open ground, affording fruit late in the season.—A. CAMPBELL.

HAVING read with interest all that has been written respecting the best system of Strawberry layering, I beg to inform you of a mode we adopted last season with good results. It is

simply layering the runners in pieces of turf about 2 or 3 inches square, which are plunged in ground with a stone or peg to keep the plant in its place. In a week the young plants will be ready either for potting or planting as the case may be. I read "FORCKER'S" note last week on the ridge of soil plan, which I also like, and prefer to layering in pots. I only suggest this plan to your readers, as I have been in many places but never saw it practised, nor do I think has it been suggested by any of your recent correspondents. The chief advantages with me are an immense saving of labour, and the quickness with which the layers produce abundant roots. If any other grower has tried the method we should be pleased to be informed of the results.—W. IRVINE, *Glossop Hall*.

[We have practised the plan and can speak of it approvingly.—Eds.]

### ABOUT LIVERPOOL.—No. 3.

As equally good practice is often found in gardens of moderate extent as in larger and more famed establishments no apology is needed for describing in a brief and general manner the leading characteristics of the following gardens:—

#### OAKVALE HOUSE.

The grounds attached to the residence of J. E. Reynolds, Esq., Sandfield Park, West Derby, are not extensive, as is the case with many places in the neighbourhood of large towns, but the gardens are worthy of note for the number of good glass structures and the good work done in them. Three houses are devoted to Vines; the first being planted with Black Hamburgs and Muscat of Alexandria, and the Grapes indicated that great care and attention had been bestowed upon them. These Vines were bearing a heavy crop, the bunches were of average size and thoroughly well finished. The Muscats in this house were worked on the Black Hamburg and were in fine condition, thus showing that Muscats and Hamburgs can be grown satisfactorily under the same conditions. In addition to these varieties the adjoining house contained a Vine of Gros Guillaume; the crop was heavy and the bunches large. The Vines are twenty-four years old. Three or four years ago they lacked vigour, which resulted in the Vines being lifted and supplied with a new border. They are now in excellent health. The third viney contains Vines of Lady Downe's, Alicante, and Black Hamburgs about forty years old; the latter Vine, having five rods, has borne a hundred bunches each year for the past fourteen years. Camellias are planted out underneath, and are doing remarkably well.

Peaches have two houses devoted to their cultivation, each 60 feet long and 18 feet wide. The trees were carrying much too heavy crops, of which the gardener was well aware—seven fruit to the square foot. A small house devoted to Orange-feld Tomatoes and two others to Melons were profitably occupied. Orchids are grown in two houses, the one for cool species having at the end a very fine young plant of *Lapageria alba*, the other containing good plants of *Phalenopsis*, *Vandas*, *Saccolabium*, *Cattleya crassa*, and three or four varieties of *C. Mossiae*, *Cypripedium*, *Miltonia spectabilis* with thirty-four flower spikes, *Laelia anceps* and *L. purpurata* very good, also good examples of *Dendrobium*, *Oncidium*, and *Calanthes*. Pines are also well grown, the plants being stocky and bearing some good fruit. A large span-roofed house is devoted to a miscellaneous assortment of stove plants; another structure of the same size contains hardwooded plants—*Azaleas*, large and small, and a very large specimen of *Rhododendron Gibsoni*. In a house of flowering plants *Calceolarias* were fading; the plants were 3 feet through, and from 1 foot to 18 inches high. Some specimen Heaths in this house in flower were good, and many of the plants in the various houses had from time to time won prominent positions in the shows at St. George's Hall. There is also a fernery, the plants being principally planted out on artificial rockwork faced with cement. The work has been well executed and presents a grotesque appearance. *Chrysanthemums* are largely and well grown, and the place generally reflects great credit upon Mr. Wilson, the gardener.

#### WHINMORE HOUSE.

The garden of W. D. Holt, Esq., could not be passed, as it is managed, and well managed be it said, by one who has attained some notoriety in the gardening world. However greatly Mr. Roberts erred on a memorable occasion—and no one regrets it more than he does—he is unquestionably a good gardener and can well afford to rely on honest effort for maintaining his position as a cultivator. He is growing *Chrysanthemums*

again, and growing them well, but perhaps not for exhibition; indeed he appears to grow all kinds of plants well that he takes in hand. In the conservatory were some remarkably fine specimens of that fine old plant *Campanula pyramidalis* 8 feet in height, each plant having five or six imposing spikes. When thus grown few summer-flowering plants can surpass it for conservatory decoration. Peaches are extensively grown under glass, the trees being remarkably clean and healthy; and Vines were in excellent condition, and were bearing capital crops of fruit. Vegetables were also good, and the entire garden afforded evidence of the ability and industry of the gardener.

#### ROBY HALL.

Mr. Pilkington's garden is of moderate size, and is very pleasantly situated—the view from the terrace embracing a fine stretch of country, including the Cheshire hills. There is a considerable extent of glass almost entirely devoted to fruit culture. The Peach trees and Vines were planted by Mr. Hindle when he had charge of the garden, and were undoubtedly planted well and have been well managed throughout. No Peach trees could be in finer condition—shoots thinly trained, leaves dark green, and clean; wood medium, short-jointed, and bristling with plump buds. The Vines are equally satisfactory, and were bearing extraordinary crops of good fruit—Black Hamburg, Trebbiano, Alicante, and Muscats. Plants are few but good, and the vegetable crops excellent. The flower garden, a sunken circular panel, was effectively planted, and the newer varieties of Roses were thriving well in the adjacent borders. A better stocked and better managed garden is not often seen than this, and Mr. Johnston is as courteous to visitors as he is skilled as a manager and cultivator.

#### COURT HEY.

This, the estate of Robertson Gladstone, Esq., nephew of the ex-Premier, adjoins the lands attached to Roby Hall. The gardens at Court Hey are notable for the extent and excellence of the fruit culture under glass, and certainly not less so for the astonishing amount of work accomplished by the gardener Mr. Ellsworthy and his two assistants. There are ranges of glass upwards of 200 feet in length, a walled kitchen garden of two acres, an orchard of half the size, the trees all pruned and well in hand, and extensive lawns. The most striking feature of the place was a grand house of Muscat Grapes. The Vines, which are thirty years old, were lifted three years ago. The borders are heavily top-dressed with rich manure, in which the roots feed. The laterals of the Vines are thinly trained but not too closely pinched; and the bunches, not numerous but regularly placed all over the roof, would average 4 lbs. in weight—a fine example of culture. Peaches and Nectarines, too, are equally well grown, thousands of fruit being of exhibition quality, and indeed have won many prizes at the Liverpool and other large provincial shows. Neither plants nor flowers are grown, nor is it possible that the gardens can be kept in high order, and that they can be rendered so productive as they are can only be the result of much thought and untiring industry. Mr. Ellsworthy certainly deserves a high meed of praise for the extent and excellence of his work.

#### STANDFIELD HOUSE.

The residence of J. S. Clayton, Esq., is situated at Waver-tree. A grand Peach range is the chief feature of this garden. The wall is lofty and 200 feet in length, every part of it from base to apex being covered with fruit in the season. The trees have recently been protected with glass, a substantial structure of which they are worthy. In the front is a double horizontal cordon of Pears and Plums, and at intervals in the border Tomatoes are grown trained to stakes. It is a very fine and profitable house, the Peach trees on the back wall being a treat to see, and both owner and gardener have great reason to be proud of them. Grapes are well grown, medium-sized, highly finished, useful bunches being the object desired and attained. Plants are limited, but healthy; and adjoining the conservatory—a wing of it—is a well-appointed billiard room. *Chrysanthemums*, as in nearly all the gardens about Liverpool, are cultivated with care, and vegetable crops receive a large share of the attention of Mr. Barton, whose work places him in the foremost rank of the gardeners of the district.

#### NEW HEYS, ALLERTON.

This, the pleasantly situated residence of W. G. Bateson, Esq., has attached to it a cherished and well-managed garden, not large but very enjoyable. Ferns appear to be favourite plants here. They are very numerous, and many of them are

sufficiently good to have won many prizes at the Liverpool shows. Fine-foliage plants are also extensively grown, the houses being crowded with them, Caladiums especially being grown by hundreds. The conservatory was gay with plants in season, noteworthy amongst which were superior examples of *Pancreatum fragrans*. Auriculas are also grown here, and probably two or three hundred or more Chrysanthemums. Shrubs and Conifers flourish well, and there are fine beds of Roses. Mr. Elliott, who has also the superintendence of the home farm, is a persevering, energetic, and able gardener.—J. W.

#### EASTER BEURRÉ PEAR.

IN some notes on Pears sent to the Journal about this time last year I mentioned the difficulty I had experienced in properly ripening this Pear for several seasons. I had then a few dozen fine fruit on espaliers which were gathered in two batches on October the 5th and 12th, and carefully stewed away in boxes in a wine cellar, where several other kinds of Pears have always kept very well, the fruit being brought forward in due season and placed in heat to ripen. About February some of the Easter Beurré were introduced into heat and failed, and since then from time to time the rest have been tried with a like result, the fruit turning soapy or rotting outright. About three weeks ago the last half dozen were placed in a late vinery covered up in a box, and I now and you one of them to show how they have failed. Can any of your readers who succeed with this Pear tell us how they grow it and manage to mature it? From the specimen sent you will see that so far as size and appearance goes I have nothing to complain of.—ESSEX.

[This is a remarkable instance of the Easter Beurré not ripening. The fruit is large and handsome, well developed, and with all the appearance of perfection; but it is even now perfectly hard, and without any indication that it will ever melt until it is stewed. This is one of those unaccountable cases of the capriciousness of this variety of Pear.]

#### THE HAILSTORM RELIEF FUND, 1879.

THE large number of applications that have been sent in to the Committee for relief from the fund, sixty-eight in number, is indicative of the great amount of suffering caused by the hailstorm of August 3rd. Many of them are piteous appeals for assistance, if only small in amount, to meet pressing necessities, and it is an unfortunate fact that a large quantity of broken glass remains to be repaired for want of the means to replace it. The sixty-eight applications for relief represent an aggregate amount of stated damages amounting to £3600. In addition there is on the part of some members of the Committee knowledge of sufferers who are too modest to advance requests for assistance, but whose cases will not be overlooked. The sum of £600 (the present amount of the fund, and from which the working expenses have to be deducted), is but a small sum comparatively with which to relieve so much of pressing necessity, and the Committee are making a further appeal for subscriptions. The sixty-eight applicants for relief reside in so large a district that it has been found necessary to sub-divide it into four divisions, and an investigation Sub-Committee has been appointed for each of them. Such Sub-Committees are now at work examining statements, overlooking breakages and repairs, and collecting reliable information so that each applicant may have his case fairly set forth. The work is heavy, but it is being readily and gladly done by properly qualified practical business men. It is important that the funds be shortly closed, so that concurrently with the consideration of the reports of the Investigation Sub-Committee, the Executive Committee can make their awards and administer relief. Will all who are willing to help be good enough to contribute the same without delay? The sooner the work can be brought to a close the more welcome will be the relief to be administered to those who are in sore need of it.—RICHARD DEAN, *Ranelagh Road, Ealing*; EDWARD KING, *14, King Street, Richmond, Co. Hom. Secs.*

EUROPEAN FERNS.—I. e. have received the first number of this work, now being published in monthly parts by Messrs. Cassell, Petter, & Galpin. It is from the pen of Mr. James Britten, F.L.S., and is written in a most excellent, clear, and concise style. The illustrations are correct and well

executed, both the coloured plates and the woodcuts, the former being produced by Mr. D. Blair, F.L.S.; and the type and paper are all that could be desired in a work of this description. By the publication of this work, as is stated in the prospectus, "it is believed that the culture of Ferns will be largely and permanently developed, and a new means opened up for the entertaining as well as useful employment of time. No expense has been spared in insuring a production which shall take first rank in regard to the accuracy and beauty of its coloured plates as well as the completeness of its information, whilst the price at which it will be published will place such a work for the first time within the reach of all lovers of Ferns. Specimens will be given of all the principal species of Ferns which flourish in Europe—the varieties found in the British Isles being treated with special fulness. The coloured plates will be painted from Nature, and will be reproduced so as to secure life-like representations of the objects figured. The text will contain a popular description of the different Ferns, with information as to the localities in which they are found, the soil and conditions suitable for their propagation, and such botanical information as will be generally acceptable. A very comprehensive introduction will also be given, which will prove of valuable assistance to all possessors of this work." But whether the continuation of the introduction from month to month will be the most convenient to the general reader is somewhat problematical.

#### NOTES AND GLEANINGS.

THE following statistics concerning the exhibits at the recent INTERNATIONAL POTATO SHOW may interest some of our readers. A total of 2101 dishes were staged, each containing nine tubers, which thus numbered 18,909. 1541 dishes contained English varieties, and 560 American varieties; the latter showing a decrease as compared with last year of 60 dishes, and the former an increase of 1062, the total last year being 1539; 120 English varieties were represented, and of these the most numerous were International Kidney 108 dishes, Magnum Bonum 96, Schoolmaster 58, Grampian 54, Porter's Excelsior 54; Red Emperor 39, and Woodstock Kidney 38. Twenty-eight American varieties were staged, the most abundant being Snowflake 69 dishes, Early Vermont 54, Beauty of Hebron 48, and Trophy 46.

—THE undermentioned CHRYSANTHEMUM SOCIETIES will hold their Exhibitions on the following dates:—WALTON and Weybridge, November 18th; Kingston and Surbiton, November 20th and 21st; Putney and Fulham, November 11th and 12th; Camberwell and Peckham, November 24th and 25th; Twickenham, November 12th and 13th; Richmond, November 18th and 19th; Hackney, November 19th and 20th.

—IN the year 1880, the jubilee year of the independence of the kingdom, a NATIONAL EXHIBITION is to be held in Belgium. It will be entirely devoted to national products. The section appropriated to horticulture provides divisions for flowers, fruits, and vegetables respectively, and preparations are being made for a very extensive and imposing display.

—THE last field meeting of the year of the WOOLHOPE NATURALISTS' FIELD CLUB is held to-day (Thursday, October 2nd) at Hereford, for a "foray among the funguses" in the Foxley Woods, a soiree being afterwards held and papers read at the residence of Thomas Cam, Esq. In previous years the Pomona Committee of the Club held their meeting and annual exhibition of fruits at the same time as the fungus gathering; but this year the fruit exhibition will be held separately in the Free Library at Hereford on the 29th and 30th inst., the lateness of the season having rendered the change advisable. It will be in other respects convenient, as the dual programme was too great for one day; and, further, it is not easy to fix a date when both fungi and fruit can be in the best condition. Prizes for fruit—Apples and Pears—are offered in forty-one classes, divided into sections for nurserymen or market gardeners, amateurs (including gentlemen's gardeners), a section "open to all and from anywhere," one for vintage fruit, and one for cottagers. Three prizes are provided in each class, not of great amounts, but sufficient to insure as large and interesting an exhibition as the season permits.

—NEXT year the CONGRESS OF GERMAN HORTICULTURISTS will meet at Bremen. This year it was held at Cassel.

—WE learn from *Nature* that BARON FERDINAND VON MÜLLER, government botanist of Victoria, has been rewarded

for his colonial services as a naturalist with the Knight Commandership of the Order of St. Michael and St. George.

— THE Committee and Officers of the PELARGONIUM SOCIETY for 1880, as settled at the annual meeting referred to last week, are as follows:—Chairman, E. B. Foster, Esq., Clewer Manor; Vice-President, W. B. Kellock, Esq., Stamford Hill; Hon. Treasurer, Dr. Denny; Hon. Secretary, Mr. Thomas Moore; Committee, Messrs. W. Bull, H. Cannell, J. Catlin, J. George, J. Douglas, T. Dixon, H. Little, S. Hibberd, Dr. Hogg, J. James, J. R. Kinghorn, J. T. D. Llewellyn, Dr. Masters, Rev. C. P. Peach, C. E. Pearson, Dr. Sankey, F. T. Smith, G. Smith, Edmonston; G. Smith, Hornsey Road; C. Turner, Rev. A. Matthews, J. McIntosh, H. J. Veitch, G. F. Wilson, and H. Webb.

— A MEETING of the CANTERBURY AND EAST KENT ROSE SOCIETY was held at the Rose Hotel, Canterbury, on the 24th inst., Captain Lambert in the chair, when a very satisfactory report was handed in by the Secretaries announcing a substantial balance in hand. It was determined that the Exhibition for next year should be held on Thursday, July 1st, and that there should be additions made both in the value and number of the prizes.

— THE gardeners of Preston Hall, Aylesford, intend presenting Mr. WILLIAM BRADLEY, head gardener, on the occasion of his leaving, a handsome black marble clock, beautifully gilded and inlaid with malachite. The clock bears the following inscription:—"Presented to Mr. William Bradley by the gardeners, on the occasion of his leaving Preston Hall, October, 1879."

— ON the night of the 29th ult. the thermometer in the gardens at Axwell Park, near Newcastle-on-Tyne, fell to 25°, and such tender plants as Dahlias, Perilla, Heliotropes, &c., were despoiled of their beauty, being considerably injured by the frost.

— WE have received from Messrs. Edward Webb & Sons, Wordsley, Stourbridge, a box of *ASTERS* grown in their trial grounds at Kinver Hill. The blooms are very good and the colours varied, including creamy white, bright pink, purplish blue (very rich), white with pink and purple outer florets, and a striking striped variety, the florets being purple clearly margined with white. All the blooms are well imbricated and of good size, and represent an excellent strain of these valuable autumn flowers. We have also received specimens of Webb's SUMMERHILL CABBAGE LETTUCE. The heads are very large, close, green, faintly tinged with purple, and are crisp, sweet, and excellent.

— MR. LUCKHURST describes the LANGLEY PARK GREEN GOOSEBERRY as "a delicious variety for the dessert. The tree is of erect and bushy growth and an abundant cropper." When hurriedly replying to a correspondent recently, just on the eve of going to press, we had for the moment forgotten this variety, which we really know very well, and it is described as follows in the "Gardeners' Year Book" of 1871:—"Fruit medium, ovate, hairy, light green; thin skin. Very rich in flavour."

— AN experienced cultivator writes to us as follows on RIPENING GLADIOLUS CORMS:—"Gladioluses are, as in 1874, exceptionally late, and it will be necessary to take steps immediately to ripen the corms for next year. Where the collection is only an ordinary one the best way of doing so is to lift and pot the plants as they stand and finish them off under glass. This was done in 1877 with good results. Where there are too many plants for potting, they could be lifted with good balls and packed closely on borders of houses until the foliage has decayed. But this is not such a good plan as potting, as they experience no check so managed, the spikes which are opening or have to open making the plants serviceable for placing in conservatories."

— THE collection of ORCHIDS belonging to the late Mr. Mila, Arbroath, was sold by auction at Edinburgh on the 24th and 25th ult. Purchasers from the south of England were represented by Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking; Mr. Day, Tottenham; and Mr. B. S. Williams, Holloway. The following were amongst the highest prices realised:—*Lycaste Skinneri* alba, 41 guineas; *Phalenopsis Schilleriana*, 37 guineas; *Laelia elegans Turneri*, £30; *Odontoglossum nevium majus*, £24; *Masdevallia coccinea*, 16 guineas; *M. Harryana superba*, 14 guineas; *Laelia Perrinii*, 11 guineas. The whole amount realised was over £1000. Messrs. Thomson

and Sons, Clovenfords, offered a portion of their stock at the same time, a plant of the Dalkeith variety of *Vanda tricolor* fetching £30 10s.; *Odontoglossum vexillarium*, £22. Good prices were also obtained for other plants sold.

— IT may interest our readers to know that the OLD VINE AT HAMPTON COURT PALACE is this year bearing an excellent crop of Grapes. There are about 1500 bunches, the whole of which are finishing off extremely well; the bunches are larger, and the berries considerably finer than has been the case for many years. Many bunches have already been gathered and sent to the Royal table at an earlier date than usual, as this old Vine is noted for the freshness of the Grapes late in the season. The excellence of the Grapes may probably be due to the unusually wet summer, as the Vine has been known to flag in very dry seasons.

— IT is a little surprising that that fine lawn ornament *ARUNDO CONSPICUA* is not more frequently seen in gardens and pleasure grounds. Its compact yet very graceful habit and silvery plumes of inflorescence render it highly ornamental, and it possesses the advantage of flowering much earlier than the Pampas Grass. It is also equally hardy, or perhaps more hardy than the Pampas Grass, for we have seen examples of both plants in the same garden, and the *Gynerium* has been much injured by the severity of last winter, while the *Aruno* appears as healthy and fresh as ever. It was discovered by Banks and Solander during Cook's first voyage, and gathered during his second voyage by Forster, and was introduced to Kew about 1843. It abounds in New Zealand, where it grows in moist positions. It thrives in the ordinary soil of English gardens.

— MR. ALFRED TAYLOR, late foreman at Marston House, Fosse, has been appointed gardener to Lord de Mauley, Langford House, Lechlade.

#### DUPLICATE ROSES.

AS Secretary of the National Rose Society I shall be quite ready to undertake the work which "OXONIAN" suggests, but foresee great difficulties.

It has been frequently stated that there is no difference between Ferdinand de Lesseps, Maurice Bernardin, and Exposition de Brie; yet, when talking over the matter with Mr. William Paul at Brie, he said that he would undertake, if equally good blooms of the three varieties were mixed together, to distinguish each variety. Again, Mdlle. Eugénie Verdier and Madame Marie Finger are looked upon by many as identical, yet Mr. Cant in his last catalogue says they are quite distinct.

I would suggest these questions:—1, What Roses do you consider identical? 2, Ought they to be shown in the same stand? and 3, If shown ought they to score anything against the exhibitor?—D., Deal.

#### NOTES ON JUDGING.

DOES it not seem a pity that we have not in judging something more definite than at present exists as regards adjudicating the prizes? Attending shows frequently and coming in contact with judges of eminence in their respective departments, I am surprised to find what divergence of opinion exists amongst them as to the claims of competing collections; indeed, the judging seems only a matter of opinion. If some standard rules were issued by some competent authority I cannot help thinking much benefit would result.

Further, horticultural societies ought to make their schedules more explicit and express definitely what they mean. Say, for instance, if a prize is offered for eight dishes of fruit fit for table and one of these dishes simply is not fit, however good the other seven are, are the judges right in awarding them first? If so, the logical sequence is—they have given the prize for seven dishes, not eight. Then, again, sometimes a prize is offered for a dish of fruit without specifying quantity. For instance, one exhibitor shows a quart of Strawberries, perhaps another three times as many. Some judges possess an inherent weakness for quantity, consequently give the prize to the greater, while perhaps the smaller possesses the greater percentage of good fruit. Then, again, the respective values of fruit. How many points does a good Pine possess above Grapes? And so on with other fruit. Also, what is the relative value of Muscat of Alexandria, Black Hamburg, and

other Grapes, which follow next in order of merit? The same may be said of plants. Perhaps there is in them more divergence of opinion still. I know no hard and fast line can be laid down, and a judge must be guided by his own discretion, yet he would judge the more easily and satisfactorily to himself and others were he guided by established principles; hence the subject is worthy of discussion.—B. COWAN.

### BIRMINGHAM CHRYSANTHEMUM SOCIETY.

IN the early part of the year it was proposed by several of your correspondents to hold a National Show of cut blooms of Chrysanthemums, having reference more particularly to a friendly contest between the northern and southern growers. It was also proposed that the Show should be held in Birmingham, as being centrally situated, and a good show always being held there the Committee of the Birmingham Chrysanthemum Society made a liberal offer of money towards that object, and other societies have also nobly contributed; but as there is still a deficiency on the amount proposed to be raised of £18, and no money having been sent from any of the London district societies or growers, and as our Show takes place on the 26th and 27th of November, our Committee have decided to return the amounts received unless the above sum is received by the 16th of October. I feel sure that all lovers of horticulture will regret that such an excellent opportunity of making a splendid display of cut flowers should be allowed to pass by for the want of a little additional support.—C. REDFERN, Secretary.

### LAKE VIEW, CHELTENHAM.

THE RESIDENCE OF G. NEVILLE WYATT, ESQ.

THROUGH the kindness of my friend Dr. Abercrombie, so well known in the horticultural world as a grower and riser of Carnations and Picotees, I had the opportunity the other day of paying a visit to the most complete example of *residence* that I have ever seen—that is, if Cheltenham be allowed to be an *urban*. It is itself so pleasantly situated with its gardens, and promenades, and squares that one can hardly realise what a busy town it is and how many find shelter within it during the season. It is essentially a winter place, resorted to also by many an Indian officer, who finds in its balmy air a pleasanter resting place than is to be had in many places in our island; while of late years the wonderful success of its colleges both for boys and girls has added largely to its population. Well, it is just opposite to the grounds of the Boys' College that you enter those of Lake House, the residence of G. Neville Wyatt, Esq., where, besides a large horticultural establishment, may be seen all the surroundings of a country gentleman's house, as much so as if situated miles from a telegraph or a doctor, and a few of the features of which I wish to notice.

The conservatory attached to the house presented a gay and pleasing appearance, although the principal flowers that helped to fill it were very simple; amongst them an old but somewhat neglected plant, *Francoa ramosa*, held a chief place. Its long spikes of snowy blossoms so gracefully pendant were very pleasing; and they, moreover, have this advantage, that they are most useful for bouquets, and also are very suggestive of being well adapted for a wreath for ladies' hair. It is an odd hardy plant, but except in the west of England I never see it. The common *Campanula pyramidalis* and the more effective *Campanula medium calycanthema* with its various shades of blue and white also formed admirable plants for the conservatory where people can be induced to employ such common things. Passing from the conservatory into the garden I found a range of houses of all kinds—stoves, vineries, an Orchid range, a Peach and Nectarine range, &c. Pines had been grown and a few still lingered on, but they were doomed. The introduction of those from St. Michaels made, said Mr. Wyatt, the growing of them at home unnecessary, and obviated the expense and trouble. This is quite true, and English Pine-growing, like a good many other things, will have to give way to the foreigner. In the Azalea house was a good collection of pyramidal trees, excellently grown and well trained, and promising well for next spring's display. Amongst the stove plants I noticed that Hibiscuses were well grown and very bright and fine; *Dipladenia amabilis*, and the various other plants one generally sees in stoves. Then there was a long range of Orchid houses—a lean-to, which was filled with a fine collection, comprising all the best kinds, and all apparently in excellent health. The shading here was of bamboo, that intro-

duced by the Colchester Bulb and Seed Company; but instead of the shading lying on the glass there was a framework of wood raised about a foot above it, and on this the bamboo shading rested, thus affording a circulation of air while effectually shading the house. We then passed into a large range of Peaches and Nectarines, all in the most vigorous health; some had ripened off their crop, others were in full bearing, and I can testify to their excellent quality, some of the newer varieties raised by Mr. Rivers being grown and highly approved of.

The bedding-out in the garden has been very considerably diminished, and the most noticeable thing I saw was the old-fashioned *Mesembryanthemum tricolor*, which with the brilliant sun shining on it (a rare visitant this year) was very showy. We then passed through a meadow out into a monster garden, a piece of eight acres, entirely surrounded by wall, and the wall covered with fruit trees; and here let me say that on the whole of this wall—on which were large numbers of Peach and Nectarine trees, and of considerable size—I did not see but one tree on which there was a sign of blister; the leaves had not been taken off, but the trees were thick with them in fine health, with that glaucous tinge that so indicates contentment with their lot. But what shall I say of the Gooseberries? Here and all about Cheltenham they presented a most miserable aspect, not a leaf left on whole quarters, and the fruit consequently poor and shrivelled. Men were employed beating the bushes, and then destroying with the flat of the spade all that fell. By-the-by, is it not a mistake to refer such havoc as this to the caterpillar of the Gooseberry moth? Is it not the sawfly that does the damage? There was a large breadth of Peas, and I found that the favourite, in exclusion of all others, is Veitch's Perfection; while in Potatoes Suttons' Magnum Bonum bore off the palm. Nothing could exceed the vigour of the plants, which were planted in rows 4 feet apart, and 3 feet in the rows. Disease having made its appearance Mr. Wyatt had the plants dusted with lime, and so far it had appeared effectually to check it, as no symptoms of progress were visible. The haulm, as it may be supposed, was very vigorous and strong, and I have no doubt under such liberal treatment the produce will be heavy, as heavy as possible this wretched season. From this garden we passed into the shrubbery, which skirts the lake, and then by a long herbaceous border we reach the lawn in front of the house. In this herbaceous border were to be found many old-fashioned plants, with Roses and shrubs mixed amongst them.

I have thus cursorily glanced at some of the contents of this delightful residence. Mr. Wyatt is well known as a most liberal supporter of horticulture, and it is always satisfactory to find that where this is the case results which must be gratifying to him are obtained by the care of an intelligent gardener under his own personal superintendence, while to myself it was a great treat, increased by the courtesy and kindness of the master.—D., Deal.

### WELLINGTONIA GIGANTEA.

SOME very fine specimens of this handsome Conifer can be seen at Muckross, several of which are bearing cones freely and appear extremely flourishing. I will give the dimensions of two that are remarkable for their symmetry and vigour. One is 51 feet high with a girth at the base of 9 feet 6 inches, while the branches cover a space of 90 feet in circumference. Another is 53 feet high, girth at the base 8 feet. There are also others of nearly equal dimensions, all likely to become magnificent specimens. A few trees planted at the same time as those referred to, and apparently in as favourable a situation, have not succeeded nearly so well. This led me to inquire how the ground was prepared for the reception of the plants, and I have ascertained in confirmation of my own experience that those which have succeeded were planted in a deep alluvial soil thoroughly drained, proving that draining is of vital importance.—ANDREW CAMPBELL.

### APPLE DR. HOGG.

THIS is a novelty of considerable promise, being a constant and heavy cropper, and bearing large handsome fruit of the finest quality, which is in season from September to March.

It was first exhibited before the Fruit Committee of the Royal Horticultural Society on November 19th, 1878, by Mr. Sidney Ford, The Gardens, Leonardale, Horsham, and was then described as resembling Calville Blanche in shape and



colour, and with the delicate flesh of that variety. It was ordered to be cooked and reported at the next meeting on December 17th. It was brought forward again, and reported on as follows by Sir Charles Strickland, Bart., who had been



FIG. 30.—DR. HOGG APPLE.

requested to examine some varieties of cooking Apples exhibited at the last meeting :—"Dr. Hogg is very like the White Calville, probably a seedling from it. Melts perfectly, does not fall at all, juicy, slightly acid, very rich and sugary, deli-

cate aroma. A first-rate Eaking Apple." A first-class certificate was then awarded.

Dr. Hogg may be described as an excellent dessert and kitchen Apple, good also for jelly. The flesh is white, tender, juicy, sweet and briskly flavoured; skin when ripe rich golden yellow faintly streaked with red on the side next the sun, large and showy; eye generally large; stalk slender, set in a deep cavity. Very hardy, healthy, and productive, making good standard and pyramidal trees.

Our illustration is furnished by Messrs. Wm. Paul & Son of Waltham Cross, by whom this Apple is being distributed.

## HORTICULTURAL NOTES.—No. 2.

### NEWBURY AND DISTRICT—WELFORD PARK.

THIS, the seat of C. Byre, Esq., is a few miles from Newbury, the nearest station to it being Kintbury, which is about four miles distant. The gardens are badly situated, being much too near a running stream; as a consequence, some parts of it are imperfectly drained, and spring frosts are very prevalent. In spite of these drawbacks, however, under the skilful management of Mr. C. Ross it produces an abundance of excellent vegetables and fruit, some of which are sometimes successfully exhibited both at the London and local shows. The rainfall was remarkably heavy here on the night of August 2nd, as according to Mr. Ross's rain-gauge no less than 2.1 inches fell in a few hours, washing down the walks, completely filling the one large stokehole, &c. The range of houses situated at the lowest part of the kitchen garden is extensive, but some of them are much too flat, and are being gradually raised to a more satisfactory pitch. Fruit of every description is well grown, and nothing could be finer than the Peach and Nectarine trees. They are grown on the back walls, and also on low circular trellises in front of these. A Prince of Wales Peach tree nine years old, occupying a space 24 by 12 feet, was carrying seventeen dozen very fine fruit, and there were others very large. *Violette d'Étipe* Peach and Pitmaston Orange and Elruge Nectarines are the favourites for all purposes here. Noblesse Peach is grown, but does not set well. Grapes generally were carrying good crops, notably the Muscat of Alexandria. These during flowering time are kept as nearly as possible at about 70°, but they are often unavoidably below that temperature. Golden Hamburgh on its own roots failed, but does well grafted on the Black Hamburgh, and is a favourite at the table, but does not keep well. Figs planted in a low-fronted house are grown in the bush fashion and succeed admirably. In the same house a large quantity of Tomatoes were growing, there being a great and continuous demand for that useful fruit. They are fruited in 12-inch pots, are kept pinched to single stems, which are trained thinly up the roof, and the crop was very heavy and good. To follow these others were planted at the base of south walls, the fruit of which at the time of our visit was commencing to ripen, which will not be the case in many places this season. The system followed, and this is worthy of imitation, is as follows:—the seed is sown early, and the plants grown on in either 5-inch or 6-inch pots, kept pinched to a single stem, and about three tiers of fruit set before being finally hardened off, and planted out as early in June as the weather permits. Several varieties are grown, but the favourite is the Trophy. Pines, especially the Smooth Cayenne, of which Mr. Ross is a noted grower, were looking well, the fruit promising to be as fine as usual. The soil employed for these consists only of very fibrous loam and bone dust, not that bone dust usually used, Mr. Ross being independent of external supplies, having fortunately discovered a cemetery, or burying place of horse bones, in connection with a kennel of fox hounds. The bones are said to be one hundred years old, and they crumble up readily, and so useful and effective are they that we, too, wish we could discover a similar valuable supply. Mr. Ross is also a good plant-grower, and has under his charge many valuable specimens. The kitchen garden is well walled in, and the crops were looking well, but the Potatoes were badly diseased.

The past winter completely killed three fine Peach trees on the walls, and those alive look very "queer." Pears on the walls are very healthy and fruitful, the best being Glou Morceau, Monarch, Passe Colmar, Joséphine de Malines, and Jargonelle. The crops of Apples, Cherries, and Plums were very light. Small fruits were abundant, but the caterpillar was very destructive, especially among the Gooseberry bushes. A local preventive, Gorse or Furze twigs packed

closely around the stems early in the season, failed this year for the first time, owing, Mr. Ross thinks, to its being rather imperfectly done, the result of previous immunities. This practice has been for many years followed in this neighbourhood, and is worth a trial where spent tan is not to be had. The Grove End Scarlet Strawberry is the favourite for forcing; and for the table Keens' Seedling, Sir Joseph Paxton, Sir C. Napier, Dr. Hogg, and Elton Pine are grown. The pleasure grounds are not extensive, but are very pretty and well kept, the bedding-out being well done. Rhododendrons in great variety are remarkably healthy, and a fine specimen of *Picea Pinsapo* 36 feet high and very symmetrical is noteworthy. A good-sized conservatory adjoining the residence is well stocked with fine healthy Camellias, &c., and flowering grandly; up the pillars and on the roof was a large plant of the beautiful *Bignonia cherere*. Mr. Ross remarked that this species will not flower freely till it has been established four or five years.

### HAMPSTEAD PARK.

On our return drive from Welford Park we called at this, one of the residences of the Marquis of Donegal; not so much to note what it is, but rather what it has been, and certainly did not begrudge the time so spent. The kitchen garden, which at one time must have been one of the grandest in the kingdom, is seven acres in extent and well walled in. The high and massive stone pillars of the old gateways are remarkable; the carved groups of fruits and flowers, in excellent preservation, being fine and much admired by connoisseurs. The place, however, is not kept up by the present lessee, no young fruit trees having been planted for many years; as a consequence the walls are indifferently furnished. The number of men employed, too, is altogether inadequate; and taking this into consideration Mr. Millen, the painstaking gardener in charge, is to be commended for the way in which the kitchen garden and the extensive and picturesque grounds are kept. The amount of glass is comparatively small and not of the best description. The very elaborate apparatus for heating a vinery by steam has long been unworkable, but is a great curiosity nevertheless. It is altogether a very complicated and expensive affair, which contrasts very unfavourably with the heating apparatus of the present day. Mr. Millen, who grows Potatoes very extensively and well, recommends Mona's Pride, Myatt's Ashleaf, Improved Early Hammersmith, and Fox's Seedling for the early supply; and for the main crop, Covent Garden Perfection, Schoolmaster, Rector of Woodstock, Woodstock Kidney, Suttons' Magnum Bonum, Late Rose, and Irish Regent. Here again Pears only were plentiful; Passe Colmar, Louise Bonne of Jersey, Easter Beurré, Hacon's Incomparable, Ne Plus Mauvais, Duchesse d'Angoulême, Beurré de Capiaumont, Winter Nélis, and Marie Louise being very fruitful. A very moderate outlay might easily transform Hampstead Park into one of the best places in the kingdom.

### LOCKINGE PARK.

This is the residence of a very popular and well-known gentleman—viz., Col. Loyd Lindsay. It is best reached by taking train from Reading to Wantage, and is about four miles from the latter place. It is a fine place, and is very successfully managed by the gardener in charge, Mr. J. Atkins, who is well known among other things as being a very good Grape-grower. This season the Grapes are again very fine, the house of Muscat of Alexandria remarkably so. The crop of this useful variety is very heavy, the bunches large and uniform, the berries also large and for the season well coloured. The temperature at their blooming time was kept as near 70° as possible, and with occasional tapplings they set as freely as Hamburghs. The roots of these and all the Vines have free access to both in and outside borders, and the good management of these is the true secret of Mr. Atkins' success. Pearson's Golden Queen as grown here is one of the best of Grapes. It is grafted on Foster's Seedling, and is doing remarkably well, being fine in bunch and berry, and is in every respect a good companion for the Black Alicante, which also is well grown and keeps famously. Foster's Seedling and Buckland Sweetwater are both forced here, the former being the best. The crop of Peaches and Nectarines under glass were both heavy and good, the trees being very healthy. Royal George and Grosse Mignonne Peaches and Elruge Nectarine are found the best for forcing. Impératrice Albert Victor was very good, but is inferior to the Elruge. Figs are well grown, especially the Brown Turkey. There is a great variety of plants grown, among them being several very good specimens. Of



*Ferns* *Alsophila excelsa*, *Lomaria gibba*, *Gymnogramma Masonii*, *Adiantum tenerum*, *A. gracillimum*, *Davallia Mooreana*, &c., were very fine; and very noticeable among the other foliage plants were the specimens of *Cocos Weddelliana*, *Kentia Cantherburyana*, *Maranta zebrina*, *Allocasia macrorrhiza variegata*, &c. The crop of Peaches generally on the walls was rather below the average, but Early Grosse Mignonne, Early Alfred, Royal Charlotte, Royal George, and Violette Hative were notable exceptions. The crop of Pears on standard trees was a failure, but on the walls Winter Nélis, Beurré Diel, Beurré Clairgeau, Jargonelle, Glou Morceau, Louise Bonne of Jersey, and Williams' Bon Chrétien were carrying good average crops of fair-sized fruit. Plums grown as standards failed to bear on the walls: the best were Green Gage, Rovers' Early Favourite, Golden Gage, and Denyer's Victoria. Apricots were a failure. Strawberries were very abundant, the best being Keens' Seedling, President, and Loxford Hall. Fruit of the latter were very fine indeed and of good flavour. James Veitch produced an abundance of large fruit, but the quality was very indifferent. The soil of the kitchen garden is a "made soil" resting on a chalky subsoil, and the crops generally were looking well. The same remark applies to the pleasure grounds, the flower beds, including six large carpet beds, looking well in spite of the unfavourable season.—W. JEGGLEDEN.

### CURRENT TOPICS.

In reference to stealing fruit at Newcastle-on-Tyne, I wish to say that some of my fruit was stolen. I had left, and the man was found with fruit on him; if I had been there I certainly would have prosecuted, and after what has passed shall do so. It is no excuse to say there is a foolish supposition about taking fruit; the man was not a visitor but a gardener and must have known better, and Mr. Gillespie has made a great mistake to allow it to pass. The value of fruit shown at Newcastle was so great that a great amount of injury might have been done, and pilfering must be put a stop to.

**Duplicate Roses.**—In answer to "ORONIAN," I desire to say that all the Roses mentioned as duplicates have been grown by me; but with one exception—Ferdinand de Lesseps and Camille Bernardin—I cannot agree to their identity. I have looked carefully, too, at so-called duplicates at shows when judging, and can always see the difference. Exposition de Brie is supposed to be a duplicate. It is perfectly distinct in habit from any other Rose; so, too, are Reynolds Hole and Sultan of Zanzibar, also Fisher Elkes and Duke of Wellington. It might as well be said that certain so-called distinct Zonal Pelargoniums which certainly run near together are the same, and yet I have 120 to 150 varieties which I could pick out without a label to them.

A. Boyle is right about giving Geranium plants room. I have done it for a long time. I always put a plant of every sort in the kitchen garden a yard apart, also plant them in a bank between Rose trees as I do Phloxes and Gladioli; but I still plant self beds, and am sure with proper treatment, properly prepared plants, not turned out of cold frames or thumb pots, or cutting boxes, or wintered haphazard, that with the present great improvement in Zonals chiefly brought about by Mr. Pearson of Chilwell and Dr. Denny, we need have no fear of what Mr. Boyle calls flimsy plants.

I think "F. W. J." gives a useful list of Roses for towns. "BICEPS" falling foul of Général Jacqueminot was to me a mystery. I do not accept his summer dressing with its accompanying smells, and if he must use it cover with dry ashes and soil. Over-watering, over-liquid-manuring, and other fads are often the bane of many Roses. I never see green fly or an unhealthy shoot, or a mildewed one in my garden. Winter mulching, proper pruning, and avoidance of Dog Roses as stocks, especially the seedling Briar, which is late, uncertain, and unsatisfactory to me except in heavy soils, is still my opinion. There is nothing like the Manetti stock for ordinary garden Roses, which form the staple of nine gardens out of ten. I think "WYLD SAVAGE" is right about similarities in varieties, and they can be easily grouped and classified, and I much doubt if our Rose lists with regard to Teas and Bombons do not want it.—C. P. PEACHE.

### NOTES ON VILLA AND SUBURBAN GARDENING.

**KITCHEN GARDEN.**—Cauliflowers and Lettuces raised from seed sown at the end of August should now be planted out where they are to remain during the winter. Prepare a piece of ground in a

sheltered and warm position, and on it place sufficient handlights or spare garden frames, and place the young plants about 4 inches apart; give only sufficient water to settle the soil around the plants, and allow them to be fully exposed to light and air until the nights become colder. The hardier and sturdier the plants are at the commencement of winter the better can they withstand intense cold. It is also a good plan, and especially for Lettuces, to plant the narrow borders at the foot of south walls thickly with the varieties Bath or Brown Cos and Hardy Hammersmith Cabbage, and thin them out in the spring; in this manner very good Lettuces can be obtained, and in ordinary winters a number of Cauliflowers similarly planted will survive with no other protection, and produce heads the following summer almost equal to those sheltered in frames, &c. Hoe and stir the ground amongst the crops of winter Spinach, and thin out the plants so that they may become well matured and strong. As Endive plants, both the curled and broad-leaved varieties, attain their full size they must be blanched. There are various ways of blanching them successfully, but the most simple is covering each plant with a slate or tile. Those who have the convenience of a small warm dark shed or a Mushroom house can readily have a constant supply of well-blanching Endive by occasionally lifting sufficient plants without disturbing the roots and placing them in the shed moderately close together. Crops of Onions not yet harvested must be gathered without further delay, and the main crop of Cabbages should be planted out as soon as possible. As Celery advances in height let it be earthed up, choosing a dry day for the purpose. Do not earth above the hearts, and be careful not to allow the soil to enter the hearts of the plants. It is by far the safest plan before commencing to earth up to tie each plant around with a piece of matting; this will exclude the soil, and also prevent worms from eating the inside of the blanched foliage. As Vegetable Marrows and French and Runner Beans cease bearing clear them away, and all vacant ground should be either trenched or deeply dug, leaving the surface as rough as possible.

**FLOWER GARDEN AND SHRUBBERIES.**—Any alterations that are to be made either in replanting or making improvements should be noted and commenced at once. Both evergreen and deciduous trees will soon be ready for removing, and if this is carefully done they will stand a better chance of becoming established than if planted later in the winter. Turf laid now will also unite quickly, and the ground will become consolidated before the spring. As long as frosts keep off everything should be done to maintain the flower garden in as good order as the season will permit, but as soon as all hope of further beauty is past decide on the arrangement for spring bedding, for it is necessary that all bulbs such as Hyacinths and Tulips should be planted as early as possible; also have sufficient quantities in readiness of Wall-flowers, Myosotises, Silenes, Pansies, Polyanthus, Daisies, &c., for the earlier these are planted the better chance they have of becoming established and blooming correspondingly early next spring.

**CHRYSANTHEMUMS.**—These are generally late in setting their flower buds this season, but the majority of the plants are looking very promising; the foliage is clean and bright, and though possibly rather late in blooming, a good average display may be expected. As the buds become sufficiently large to handle those not required must be removed, and the plants will be benefited with liquid manure from this time. Supplies of weak guano water will render the foliage of a bright deep colour, but we have an opinion that flowers of plants supplied too freely with guano are liable to damp off. A pinch of Standen's manure will also wonderfully improve the foliage. Supply stimulants weak and often, and if the surface of the soil becomes caked stir it and keep it free from weeds and young suckers. While the weather keeps open allow the plants to remain out of doors, but the effect of 7° or 8° of frost to many of the early varieties would be quite ruinous; therefore, if there is any fear of this they should be placed under cover. Keep them well supplied with water, and secure each growth to a stake, for the wood is very brittle. Any attention these plants receive now will be amply returned in the display they will make for the next two months.

**ROSES.**—Note all the dead and dying plants, and make arrangements for supplying their places. The earlier the orders are given to the nurserymen the sooner in the season will the plants be supplied, and early orders oftentimes bring the strongest plants. Cuttings will now strike readily if the hard ripened wood of this summer's growth are taken off, cut into lengths of about 6 inches, and inserted deeply in lines about a foot apart, and about 8 inches apart in the lines. The best position is at the foot of a south-west wall, and in a piece of ground that is somewhat light and open. But any warm border will answer the same purpose. Each variety should be kept separate and labelled. If new plantations are required for next season the ground should be well trenched in readiness, incorporating among it some well-decayed manure. The Briar stock delights in a cool loamy soil, while the Manetti prefers a lighter and more porous soil. It will be well to bear this in mind when giving orders. In most villa gardens Roses on the Manetti may be cultivated successfully by taking care to cover the budded part when planting; but as all Roses do not

thrive as freely on the one stock as the other, it would be well to cultivate Roses on the various stocks. It is the best to plant Roses in beds, then they can be all treated liberally and alike; but where it is necessary to plant standards singly have the ground well broken-up and suitable soil placed for them.

## WORK FOR THE WEEK.

### KITCHEN GARDEN.

**CAULIFLOWER** plants will now be ready for moving from the seed beds. Select the strongest for transferring to handlights. Rather strong loam is most suitable and conducive to sturdy growth. The plants must be unprotected as long as it is safe to render them hardy; the lights should only be employed in case of frost or heavy cold rains, and even then air should be admitted. Lettuces for the spring and early summer supply should be planted at once, so that they be well established before winter. A sheltered border should be chosen, planting them in rows a foot apart. Lettuces for the spring and early summer supply may very well be grown along with Peas; the rows of the latter which will presently be sown may be 4 feet apart, admitting of three rows of Lettuces between, a row of Stanstead Park Cabbage Lettuce on either side of the Peas, and a row of black-seeded Bath Cos between these. If the soil be light it is necessary that it be made moderately firm by treading and then raking to form a fine surface. There must not be any neglect in dusting with wood ashes, soot, or lime to keep vermin in check, whilst all vacancies should be filled up promptly so as to secure a good plantation. When the main crop is planted a number of the remaining plants of the Cos varieties should be pricked out into a prepared bed in a sheltered position; the plants, if they winter safely, will be very useful in spring for transplanting. Endive plants from the late sowings may be planted at the foot of walls, or they will succeed under similar conditions to the Lettuces. Lettuces which are to give a continuous supply when that outside is exhausted should be lifted and planted in pits or frames. Endive plants, too, for use during the winter months should also be placed in pits or frames. Much labour is entailed in the preservation of these plants in cold frames. Where the demand is large shallow pits with moveable lights with the command of artificial heat to exclude frost are necessary to secure supplies in good condition throughout the winter months. The ground rendered vacant by the removal of Potatoes and Onions being prepared by well manuring and digging will be available for planting Cabbages. Ground previously occupied by Onions is very suitable for Cabbages. Earlier planted crops should be frequently hoed, and when necessary have a moderate earthing. Lose no favourable opportunity of attending to the earthing of Celery, tying up Lettuces and Endive. Parsley in pits should be well thinned, but still fully exposed except in case of drenching rains. If there be no plants as yet in pits strong plants from the spring sowing may be carefully lifted and planted either in pits, or deep boxes or large pots, which last placed in an orchard house or vinery at rest will afford an acceptable supply in severe weather. It is quite as important to keep up a supply of vegetables of the summer varieties as to have them early, therefore have protecting materials at hand in case of sudden frost. The season has been most unfavourable to ridge Cucumbers, Vegetable Marrows, and Tomatoes. In case of frost or even cold nights some light protective material thrown over them may so ward off its effects as to admit the supply being continued for some time yet. Tomatoes on walls have a fair crop of fruit; cut them as they ripen.

### MUSHROOM HOUSE.

Continue to prepare material for successional beds, making up one or more beds at intervals of three or four weeks so as to maintain an unbroken supply of this esteemed esculent. It is essential that the materials be put together with as little previous fermentation as possible, because fermentation induces decay. Spread the materials out in an open shed thinly and in small quantities, and though a slight warmth may be generated moisture will be dispelled. The best Mushroom beds are made up of about two-thirds horse droppings and one of short litter, which admits of slower decomposition, maintaining a steady heat. It is necessary to have a certain amount of moisture in the material, as when heating much moisture is evaporated, so that if too dry previously the heat will soon become exhausted from the want of sufficient moisture to continue the fermentation. Place the materials together as firmly as possible, insert good fresh spawn when the bed is at a temperature of 70° to 75°, earth with some rich loam, so moist as to form a firm surface, and when the Mushrooms appear keep the bed uniformly moist.

### HARDY FRUIT GARDEN.

Wherever it may be intended to form plantations of young fruit trees the ground should now be prepared for their reception. The preparation will of course depend entirely upon the character of the soil and its underlying stratum. Soils resting on a heavy and retentive subsoil will require thorough and effective drainage, bearing in mind that the object of drainage is not so much the removal of water from the surface as to prevent its stagnation in the subsoil. Shallow drains are of no use; 3 feet should be a

minimum and 4 feet a maximum depth. The ground should be trenched about 2 feet deep, not bringing up too much of the unfavourable subsoil; but it is advisable to loosen the soil to a good depth. Old borders should have a considerable addition of fresh turfy loam, adding to those deficient of calcareous matter a tenth of chalk or old mortar rubbish; and when the soil is of a light sandy nature drainage may not be necessary, especially if the under stratum be gravel, but the surface soil should be enriched by a free admixture of fresh turfy loam, with preferably a free use of clayey loam or marl and a moderate amount of well-decayed manure. It is as yet too early for the planting of fruit trees, as the growth is unusually late, but it is well to have all in readiness for planting as soon as the trees are in a fit state to remove.

### FRUIT HOUSES.

**Orchard House.**—The ventilators of this structure should be open whenever the weather is favourable, but in order to harden the sappy growths allow the temperature to rise to 70° or 75° with but moderate ventilation, and close early in the afternoon, admitting a little air before nightfall. It is of the greatest importance that the wood of all kinds of fruit trees should be thoroughly ripened; therefore all superfluous shoots should be at once cut out so as to admit as great an amount of light and air to the remaining spurs as possible. Except an occasional syringing to cleanse the trees of insect pests moisture overhead may be dispensed with, and moisture at the roots must only be afforded to keep the foliage in good condition.

**Cucumbers.**—The plants for winter fruiting should be planted as soon as ready. A good bottom heat is essential to success whether it be obtained by the aid of fermenting materials or hot-water pipes; 80° being sufficiently high if from hot-water pipes, but a somewhat higher temperature is needed to commence with if fermenting materials are employed, as the heat will decline. The soil should consist of turfy loam, and for imparting vigour later on depend more on liquid manure than on giving it in the compost. Maintain a healthy and vigorous growth in the autumn-fruiting plants, being careful not to overcrop them. Secure a mean temperature of 75°, and gradually reduce the moisture as the days shorten and the heat declines. Add a little fresh compost about once a fortnight, applying weak liquid manure once or twice a week as may be necessary, fumigating moderately occasionally.

**Melons.**—The season as regards dung-heated pits and frames is about over, but where the fruits are still green and the plants healthy, linings of hot dung and night coverings will be necessary to insure their swelling off, cutting them when approaching ripening, and placing them in a warm and dry house. The weather is greatly in favour of late crops. Let the glass be kept clean, the foliage fairly thin so as to admit every ray of light, and afford no more water than to prevent flagging.

### PLANT HOUSES.

**Greenhouse.**—Zonal Pelargoniums that have been well grown and are stout and bushy should be placed in a light position in a house with a temperature of 50° to 55° with moderate ventilation, supplying liquid manure once or twice a week: they will be useful during winter. Cinerarias now advanced for flowering will require a temperature of 50° to 55° to enable them to expand the flowers well. Late Fuchsias should be encouraged by removing the seed pods as soon as the flowers have fallen, and affording weak liquid manure occasionally. Lachenalias should be potted so soon as they begin to grow, affording them light airy situations, and being careful to supply them with sufficient water. They do well in turfy loam with an admixture of leaf soil. Gladioli not yet flowered may be taken up and potted in 6-inch pots. Plants of *Anemone vitifolia alba* lifted with balls and potted will, if stood at the back of a south wall for a few days, soon recover, and being full of flower and buds make a fine display in the greenhouse or conservatory for a long time. *Schizostylis coccinea* may also be lifted, and if well supplied with water will afford spikes for cutting over a lengthened period. Plants of *Daphne indica* set with buds may be introduced to a temperature of 50° by artificial means, and will come in at a time when very acceptable. *Richardia* (*Galla*) *æthiopica* planted out should be lifted and potted in 7 or 8-inch pots, and placed in a house of from 45° to 50°, introducing plants at intervals to a structure kept at 55° to 65°, by which means the spathe of these plants may be had for most of the winter. *Heliotropes* that have been grown on through the summer for winter flowering should have plenty of light and a temperature of about 50°. *Primulas* that were sown early and grown on through the summer in cold frames are now in flower, and should be near to the glass and be supplied with liquid manure occasionally. Shading in this structure should now be dispensed with, and the glass both inside and outside should be thoroughly cleaned. Thrips and aphids may be subdued by fumigation; white scale, so troublesome on *Acacias*, may be destroyed by an application of methylated spirits and turpentine, a wineglassful each to a gallon of water, afterwards syringing with clear water. With a decline of temperature and shorter days the supply of water to most plants will need to be lessened. No fire heat will be necessary as yet, but the heating apparatus must be in good working order so as to be available in case of frost to maintain a temperature of 40° to 45° by artificial means, which is ample for the general stock.

Admit air freely in favourable weather, and seek by every means to render the growth well hardened before winter.

### TRADE CATALOGUES RECEIVED.

William Paul & Son, Waltham Cross.—*Catalogues of Roses and Fruit Trees.*

William Potten, Staplehurst, Kent.—*A List of Roses, Fruit Trees, and Conifers.*

J. Wheeler & Son, Gloucester.—*Catalogue of Fruit Trees, Roses, &c.*

W. Caudwell, Wantage.—*List of Roses.*

W. Tait & Co., Dublin.—*Catalogue of Bulbs.*

Joseph Schwartz, 48, Rue du Repas, Lyons.—*Catalogue of Roses.*

Frères Simon-Louis, Metz, Lorraine.—*Catalogue of Fruit Trees, &c.*

P. Van der Meer, Noordwijk, Holland.—*Catalogue of Dutch Flower Roots.*

### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

GARDENERS' EXAMINATIONS (Reader).—There are no examinations such as you refer to, now conducted by the Royal Horticultural Society.

SKELTONISING LEAVES (A Subscriber).—Mr. John Kaye, Hale, Cheshire, publishes a small handbook on this subject, but we do not know the price of it.

DRIED FLOWERS FOR BOUQUETS (R. J. W.).—Several species of Helichrysum, Gnaphalium, &c., are grown for the purpose you name, but the one you especially refer to is probably Helichrysum argenteum, a native of the Cape of Good Hope.

BLUE BERRY AND BILBERRY (G. P.).—The Bilberry is Vaccinium Myrtillus, and the Blue Berry of Canada is Vaccinium pennsylvanicum, quite a different plant, which was introduced to this country in 1772.

BLACK CURRANT CUTTINGS (W. K.).—No better time can be chosen for inserting cuttings of Black Currants than immediately after the leaves have fallen from the bushes. Choose straight, sound, young shoots, making the cuttings about 18 inches long, and insert them firmly nearly half their length in the soil, 6 inches or more apart, in rows 18 inches asunder. It is very important to divest the cuttings of Red Currants of all the buds except three or four at the top of each cutting, but we do not find it necessary to remove any buds from the cuttings of Black Currants.

IRISES IN POTS (H. S.).—The Irises you name will not force well, but they flower very well in pots when the plants are brought on gradually in cool frames or on a shelf in a light greenhouse. You may pot them the same as Hyacinths, and give them the same treatment generally, except that, they will not endure the same amount of forcing, and will not flower until long after the Hyacinths have faded.

VINE BORDER (T. S.).—Instead of making the border the entire width for the reception of young Vines, we prefer making it only 4 or 5 feet wide at the first, the front being supported with a wall of turves, increasing the width yearly as the roots extend and the Vines require more nourishment. Unless your border is concreted and well drained a brick wall will be of little use in confining the roots. As to the necessity for a wall, everything depends on the nature of the soil of the garden. We know of many good houses of Grapes where the principal roots of the Vines have extended far beyond the border. If you wish to confine the roots the border must be concreted, and the bricks forming the wall be laid in cement. If the subsoil is of a sandy or gravelly nature we should not use concrete; and if the Vines to be grown are Black Hamburgs and not required for early forcing, we should not build a wall provided the soil of the garden is fertile. We can generally manage to keep the roots "at home" by placing a covering of rich manure on the surface of the border annually about October.

VINES UNFRUITFUL (L. R.).—First of all attend to the rods. If the spurs and laterals that produce the fruit are nearer to each other than 18 inches cut some of them out with a fine-toothed saw close to the main rods, afterwards paring the cuts smoothly with a sharp knife. Do this at once, leaving the stronger laterals, which by the additional light and air admitted will mature their wood much better than if left crowded. At the winter pruning, which should be conducted immediately the leaves have fallen, do not prune too closely. Rather than prune back to the weak buds at the base of the laterals we would tie an occasional lateral up to the main rod and shorten it at the best and boldest bud where the wood is hard and brown. If you adopt this plan you will have far more side growths in the spring than you require; therefore, immediately you can see which promise to produce the best bunches, which will be when the shoots are about 3 inches long, remove all the others, leaving those for bearing the crop not closer than 18 inches apart up both sides of the rods. These laterals must have their tips pinched out two or three joints beyond each bunch, according as space is afforded for the free and unobstructed development of the leaves; but from near the base of each Vine select one good lateral and do not stop it, but train it up in as light a position as possible, letting it grow to the top of the house if it will do so. Now to the roots. Is the border well drained? If not, drain it. Is the soil inert? If so remove it and introduce fresh loam. Probably if you remove the surface soil, just barring the roots but not injuring them, and apply a sprinkling of burnt soil or charred refuse of any kind, placing on this a heavy dressing of rich manure 5 or 6 inches in thickness, you would promote the emission of surface roots to the certain benefit of the Vines. This work should be done at once, never taking the manure off the border again, but allowing it to decay and become part of the soil. If you carry out these instructions and let us know the conditions of the Vines next autumn we will give you further advice, or sooner if you need it.

PRUNING VINES (A Subscriber).—If the canes are strong you may safely prune them so as to secure two laterals from each side of the rod and one leading shoot, the laterals not being from 18 to 18 inches apart. The Vines

should be 3 feet 6 inches apart; if they are closer than this some of them may be left nearly their entire length, be borne heavily, and then removed. The wires ought to have been placed twice the distance from the glass, or 18 inches. Discontinue damping now, and employ fire heat in the daytime if necessary to maintain a dry atmosphere and warm temperature with abundant ventilation, but do not fire when the house is closed. The wood will then mature rapidly. Muscat of Alexandria will succeed in a house containing such varieties as Lady Downe's, Alicante, and Gros Colman, all of which thrive in a Muscat temperature.

SEEDLING BRIARS (Devonshire).—If you state the number you require to any good Rose nurseryman, informing him that you want them strong for budding next spring, he will supply what you require. Age is not a sufficient criterion of the condition of the Briars. You had better order them now and desire them to be sent as soon as they are ready, then plant them immediately in good and well-worked soil, mulching with manure.

WINTERING CARNATIONS (L. S. D.).—All the choicer varieties should be potted as soon as the layers are rooted and be wintered in frames. If the pots are plunged in ashes or cocoa-nut fibre refuse the frames will need no covering during the winter. The plants may be shaded slightly and the frames be kept rather close for a week or ten days, but afterwards too much air cannot be admitted during all favourable weather. The plants so wintered will be in fine condition for planting out in spring, or for growing in pots.

MILLIPEDES IN MANURE (Tyro).—We do not think the millipedes which you find in the manure applied to the Roses will injure the trees, still it is advisable to check their increase. The application of soot water applied as you propose would certainly benefit the Roses; and if it does not destroy the millipedes mix, by thorough agitation with a syringe, an ounce of paraffin with a gallon of water and apply it to each tree, but try the soot water first.

PEACHES AND NECTARINES FOR A GLASS HOUSE (J. W. H.).—Peaches: Early Beatrix, Early Rivers, Rivers' Early York, Dr. Hogg, Groses Mignonne, Noblesse, Barrington, Walburton Admirable, and Lady Palmerston. Nectarines: Lord Napier, Stanwick Kirgus, Rivers' White, Pittmaston Orange, Balgowan, Downton, Pine Apple, and Victoria.

LIGHT versus DARK FUCHSIAS (J. Lamb).—Mr. Cannell, who is good authority on Fuchsias, informs us that twenty-six or twenty-seven years ago when Mr. Storey raised Queen Victoria and Lady of the Lake, the question arose as to whether a Fuchsia with a white corolla and scarlet sepals should be placed in the "Light-coloured" class, and it was decided in the affirmative. As that decision has always been adhered to, the flower you have sent belongs to the "Light variety" section.

PROPAGATING ECHINERIAS (J. A. X.).—Drain some pans or boxes well, and fill them with rough and very gritty soil; remove the offsets now with all the stem possible, cutting off a lower leaf or two and any that are decayed, and let the wounds dry; then insert the offsets thinly in the boxes so as to leave a little space between each small plant. If the soil is moderately moist no water will be needed for a week or two. Place the boxes on a shelf in a light greenhouse or in a dry frame, and admit air freely. When water is applied let it be floated between the offsets, not sprinkled on them, so that it penetrates the entire mass of soil. Only water when the soil is dry, as excess is pernicious. Next May plant the offsets in rich soil in an open situation in the garden, and they will make fine plants by the autumn.

PROPAGATING LOBELIAS AND GERANIUMS (Idem).—If you wish to preserve the old plants of Lobelias that are now forming green tufts, you must pot and place them in a frame, keeping them moist, and if needful shaded until they are established, then winter them on a shelf in the greenhouse. They will flower well early in the season, but will be no use for edging or bedding purposes, for which young plants are needed. To produce this divide the old plants, selecting some small tufts with roots on the stems, and insert them in light sandy soil in boxes. The tufts should be quite small and healthy, not drawn, and should be placed an inch or two apart in the boxes. With care in watering, and shading slightly when necessary, the boxes being placed in a frame for a time, and afterwards on a shelf in the greenhouse, you may preserve a good proportion of what you insert, which will form good plants by bedding-out time. The Geranium cuttings decayed because they were too warm, close, and moist. Insert short-jointed cuttings in gritty soil in well-drained pots, and place them on a shelf in the greenhouse, letting them have all the sun and air possible, watering only to keep the soil just moist. Most of the cuttings will strike, although many of the leaves will decay. When you apply water give it thoroughly.

FREE-GROWING ROSES (Idem).—Select the following from the varieties recommended by "BIOEPS" last week on page 244:—Captaine Christy, Marie Baumann, Camille Bernardin, Dr. Andry, Duke of Edinburgh, Duchesse de Valombrose, Dupuy Jamain, Edouard Morren, Ferdinand de Lesseps, Jules Margottin, Lord Macanlay, Baronne de Rothschild, Madame C. Joigneaux, Madame Lacharme, Mdle. Eugénie Verdier, Maréchal Vaillant, Etienne Levet, Prince Camille de Rohan, Sénateur Vaise, Victor Verdier, Gloire de Dijon, and Souvenir de Malmaison.

PROPAGATING NEPENTHES (B. E. J., A Young Gardener).—Cuttings strike freely when inserted in the cocoa-nut fibre refuse bed of a well-heated propagating house; but your safer plan will be to notch the growths as you propose, split a small pot and place it round each stem, and fill with turfy peat, sphagnum, and charcoal, and if this is kept moist and a brisk temperature maintained roots will soon take possession of the compost. Do not stop the flowering spikes of the Phalenopsis.

CLEODENDRON BALFOURIANUM CULTURE (Idem).—Your chief object should be to have the growths thoroughly matured by affording all the light possible to the plant and some heat, not applying water too copiously at the roots. Winter the plant in a temperature of 50°. If you send 3d. in postage stamps to the publisher and ask him to send you No. 940 of the Journal, you will find an article from which you will obtain practical information on the culture of this plant.

POTTING LAPAGERIA (W. Johnson).—If the plant is quite healthy and growing freely you may repot it now, draining the pot thoroughly, employing a compost of very turfy peat and turfy loam, with a liberal admixture of crushed charcoal and sharp sand. If the plant is not growing freely we should not repot it until the spring.

DEADLY CHERRY (Old Subscriber).—Mix it thoroughly with earth or ashes, and spread it over the plot where Cabbages are to be planted.

HEATING A GREENHOUSE (S. E. C.).—Undoubtedly the best mode of heating a greenhouse 15 by 15 feet is by using a small boiler and hot-water pipes. Two rows of 3-inch pipes would suffice if the house is a lean-to and



not greatly exposed. This mode of heating, too, is in the end not much more costly than other modes that are apparently more economical.

**FORMING A ROSE GARDEN (Cottage).**—We have known Roses much injured when growing contiguous to large brick kilns, and if the kilns are likely to increase we should not plant Roses largely until we found by experience, obtained by planting a limited number, that they would prosper. Your suggestion of alternate annual cropping of Roses and vegetables would be good were you growing plants for sale, otherwise the Roses may occupy the ground for three years before they are removed. The plants you name should be kept in a room from which frost is excluded, not a close warm apartment. They should be watered less copiously than in summer, but should not be permitted to become dust dry. Do not replot them until they show signs of fresh growth in the spring.

**PORTUGAL LAUREL INJURED (A Constant Reader).**—The injury is probably the result of the severe frost of last winter. We have seen many shrubs similarly injured. All you can do is to cut away the parts damaged, and by a little tying of the healthy branches you may perhaps preserve much of the uniformity of the specimen.

**DIVIDING AND PLANTING PHLOXES (A. C. S.).**—The plants may be divided and replanted with safety in October, and you may also purchase and plant young plants now for flowering next year. Ferns for the rockery we should obtain in pots and plant next spring, just as they commence throwing up young fronds.

**GOOSEBERRIES AS ESPALIERS (J. Davies).**—We have had no experience of the plan as a commercial mode of culture, but we have seen the system successfully adopted in private gardens. By planting in rows 6 feet apart and training the growths upright across wires you will certainly attain the objects specified—namely, increased fertility for manipulating both trees and fruit, greater facility for protecting the trees, and effect an economy in land by affording space between the rows for other crops.

**PRIMULA ROSA FROM SEED (R. Blanchard).**—Plants can be readily raised from seed; indeed, we believe that Mr. Ware first obtained his stock by that mode of increase, but we do not know if seed is offered for sale.

**CELERY WITHERED (T. S. H.).**—Your plants have been severely attacked by the Celery fly. See reply to "M. M." in last week's Journal, page 267. If all the leaves are as bad as those sent, your crop, we fear, will be of little value. You ought to have adopted remedial measures long ago. It is too late to restore the plants to vigour now.

**FLOWERING SHRUBS (E. C. K. Dublin).**—Some of the best evergreen flowering shrubs are—*Berberis Darwinii*, *B. japonica*, *Mahonia Aquifolium*, *Helianthemum algarvense*, *Cistus angustifolius*, *C. purpureus*, *C. ladaniferus*, *Helianthemum*, *Ligustrum ovalifolium*, *Spartium junceum*, *S. multiflorum*, *S. scoparium*, *Ulex europaea flore pleno*, *U. stricta*, *Viburnum Tinus*, *Vinca major*, *V. minor*, *Rhododendrons*, *Andromeda floribunda*, *Erica mediterranea*, *E. hibernica*, *E. herbacea*, *E. carnea*, *Kalmia angustifolia*, *K. latifolia*, *Ledum angustifolium*, *L. latifolium*, and *Fernetya mucronata*.

**NAMES OF FRUITS (Mrs. Day).**—If you will send us a bunch of Grapes firmly packed in wadding in a box so that it arrives in good condition, we will endeavour to name the variety. Every berry of the bunch sent was smashed owing to the bunch being placed loosely in a tin box. (Q. C.).—The Apple is, we think, the Madeleine, known in some northern localities as the White Margaret. (R. Palmer Williams).—It is the Cherry Plum, the fruit of *Prunus myrobalana*. (W. Potter).—1, Loam's Pearmain; 2, Bradrick's Nonpareil; 3, Not known. (W. B. Fisher).—The Nectarine was quite rotten when it arrived. You should have sent some leaves also to assist in the identification. If you send again see that the fruit is not over-ripe. (George Swales).—Wadhurst Pippin, certainly not London Pippin.

**NAMES OF PLANTS (A. A.).**—1, *Paeonia Bellottii*; 2, *P. cærules racemosa*; 3, We think is *Encornia punctata*, but we cannot be certain without seeing a flower; 4, *A. Cupressus*, probably *C. macrocarpa*. (A. C.).—1, *Phygelius capensis*; 2, *Eupatorium cannabinum*; 3, *Hibiscus syriacus* var.; 4, *Cotoneaster frigida*; 5, *Acacia dealbata*; 6, *Rhamnus latifolia*. (J. Howell).—The specimen is *Platystemon californicum*, an annual and a native of California. (G. O. S.).—*Geranum molle*. (Rose).—Your plant is not an Orchid but an herbaceous plant, included in the natural order Melanthaceae, and named *Tricyrtis hirta*. It was discovered in Japan by the traveller Thunberg. (James).—The Fern is *Gymnogramma chrysophylla*, and the *Begonia weltoniensis*. It is impossible to name varieties of *Colerases* from single leaves, or even from sprays, the varieties are so numerous and many of them so nearly alike that it is only by comparing plants with others in a large collection that the correct names of the varieties can be determined. (F. T. F.).—*Eryngium campestre*; Field Eryngo is the English name, a near ally of the Sea Holly, so common on our sandy seacoasts. (T. R. G.).—1, *Spiraea alpina*, syn. *Siberica*; 2, *Rhus Cotinus*; 3, *Polygonum Sieboldii*; 4, *Spiraea callosa*; 5, *Clethra tomentosa*; 6, *Lycocateria formosa*. (J. C. Ambleride).—1, *Widdingtonia cupressoides*; 2, *Thuopsis dolabrata*; 3, Too withered for identification, perhaps *Thuja orientalis* var. *compacta*; 4, *Retinospora obtusa*; 5, *Thuja orientalis* (Chinese Arbor-Vitæ); 6, *Cupressus Lawsoniana fragrans*. (Dickon).—1, *Asclepias curassavica*; 2, *Gymnogramma peruviana*; 3, *Pteris serrulata cristata*; 4, *Gymnogramma chrysophylla*; 5, *Rivina laevis*; 6, *Neottiopteris nidus*; 7, *Tradescantia variegata*. (Peter Donald).—1, Specimen too withered; 2, *Euonymus europæus*; 3, *Achillea Ptarmica flore pleno*; 4, *Polygonum orientale*. (R. H. C.).—1, Resembles *Fraxinea appendiculata*; 2, *Lycocateria formosa*. (S. A. C.).—1, Specimen insufficient; 2, *Tradescantia zebrina*; 3, *Lycocateria formosa*; 4, *Euonymus europæa*; 5, *Sedum spectabile*.

## THE HOME FARM:

POULTRY, PIGEON, AND BEE CHRONICLE.

### DRAINING OF HEAVY LAND.

(Continued from page 259.)

IN illustrating our practice of draining we shall next refer to a field of 14 acres upon a farm under our agency which we drained, and at the same time made a map of the work, showing every drain,

their depth and their outfalls, and this enabled us in after years to measure and find any drain which had become stopped. The home farmer will at once see the importance of draining being mapped, because under a change of managers or occupancy it would otherwise be extremely difficult to find the position of drains and their depth, and thus entail a serious expense in the event of repairs being required. The said field consisted of a strong clay with stones in it, but no veins of sand; the lower half of the field however, being more loamy, did not require the drains to be so thickly laid. The drains throughout were laid down the incline, there being a fall of about 20 feet from the top of the field to the lower end; the drains were laid with 2-inch pipes 86 feet apart, but the upper part of the field being the wettest, caused by surface water, the result of excessive rainfalls. These drains were intersected with others so that the strongest land was drained at 18 feet and the more friable part at 86 feet apart; the intersecting drains being connected with the others about half way down the field. At the lower part of the field these drains at 86 feet apart were connected with main drains of 8-inch pipes laid at right angles, each main relieving six drains by an outfall into the ditch, the object being to accumulate sufficient water at the outfalls to force and keep them clear, and this plan we prefer to each drain having its own outfall, either into the ditch or through the bank, as they are liable to become choked, but not so where a number of them go in the main drain with a single outfall. The connection of these drains by pipes is in our opinion an important matter, and instead of breaking a hole in the side of a main pipe for connecting a branch or a leader, we prefer what we call shouldered or angle pipes for the purpose, which are of two patterns, and can be obtained from most pipe manufacturers. Imperfect connections are then avoided, which often prove the cause of stoppages, &c. in cutting the drains in this field the work was accelerated considerably by using the plough to turn out two furrows on either side, so that the drains which were 8 feet deep were opened by the plough, and the soil loosened to the depth of 12 inches. We, however, wish to refer to the manner of digging out the drains; and because the ground was rather stony we did not like to depend upon the system of digging, whereby the cutting is made narrow enough at the bottom for the pipe to fit in the ordinary manner, but preferred to move the soil one spit wide at the bottom with one side made lower than the other, so that in filling in the earth its weight and pressure should effectually keep the pipe in the position as laid on the lowest side. The soil having been moved wider at the bottom gave greater facility for catching the water and leading it into the pipe, but the principal object of the latter plan is to be able in stony clay land to make the floor of the drain quite smooth in order that the stones may not interfere with the laying of the pipes quite level. In the drains cut to fit the pipes they cannot so easily be laid exactly level, and when one pipe is out of the level by resting or partly resting on a stone it is often the cause of a stoppage, by the earth entering the pipe with the water. This is more especially the case with 1-inch pipes, and is one of the principal reasons why we prefer the 2-inch pipes, and reject the use of those of only 1 inch in diameter, for we have known hundreds of acres of draining become useless entirely in consequence of using pipes of the smaller size.

In the field we have just alluded to the draining proved effective for many years, and until the death of the owner, when the estate was sold, and we gave up the agency. To continue our illustrations we will next refer to a field on the same estate of about 8 acres, the soil being a very stiff yellow clay but without stones, and injured only by the retention of surface water. We therefore in this case after digging holes in different parts of the field to thoroughly understand the nature of the soil, and digging a ditch all round it for the same purpose, as well as to obtain a sufficient outfall for the drains, we decided upon draining upon the plan, whereby the drain is cut as narrow as possible so as to move less earth and thus diminish the labour. In order that the drain may be made to fit the 2-inch pipe at the bottom it should not be wider than the outside diameter of the pipe. This field was so extremely flat as to be called table land, and there being no natural outfall

we were obliged to make two at both ends of the field and two at the sides by making the outfalls 4 feet deep. The main drains 3½ feet deep, and the drains throughout 8 feet deep, were placed 16 feet apart, upon the principle of what is called thorough draining—that is, to lay the drains near enough together to draw off readily the whole of the surface water as quickly as possible.

We will now describe for the benefit of the home farmer, some of whom may be novices in these matters, the tools required, and the method of cutting these narrow drains. The ordinary spades are of but little use for the work of draining in tenacious clays; we therefore employ the patent grafting tools first made by Mr. Lyndon of Birmingham about forty years ago. They are, however, now quite common, and can be easily obtained anywhere. These tools are thin and well plated with steel, and will enter readily into hard clays. The top spit is easily removed; the two middle spits, however, are removed by a narrow three-quarter spade with a projecting iron for the foot, and the bottom spit is taken out by a long 14-inch spade with two cutting edges and an iron rest for the foot; this is used edgewise first, and then removes a narrow but deep spit of earth, thus forming the bottom, the narrow scoop following for the removal of crumbe. The drain is then ready for receiving the pipes, having been made with sufficient fall, which can be easily ascertained by a common carpenter's level. It must, however, be understood that the pipes cannot be placed by hand in such narrow drains; the drainers therefore use a piece of iron rod fixed in a handle and bent at right angles, on which they place the pipe and lower it into its place whilst standing astride on the top of the opening. The shape of this field was in length about double its width, and where a cross main drain was laid intersecting all the rest, with an outfall on either side, and with a main drain across either end, into which all the 8-foot drains emptied. The work was then quite complete, because there were in that case six outfalls all in operation at the same time, and each relieving a certain number of the ordinary drains, which, as before stated, were placed at 16 feet apart. The result of draining this field was that it nearly doubled its letting value.

Our last illustration relating to the draining of heavy land was carried out upon a field of our own, and will exhibit in a remarkable manner the serious mistakes which may be made by drainers, and at the same time show the difference and value of the system of draining which now prevails compared with that in fashion at a more remote period. This piece of land contained about 5 acres, and when first we became possessed of it was in pasture, and about as worthless a meadow as could well be seen except about 1 acre, which was dry and very productive. The subsoil was of rather a strong clay with some veins of sand in it, and had been drained formerly with gravel drains for removing the surface water. They had, however, become stopped, and the meadow was so hopelessly wet and the herbage so sour and coarse that we decided upon breaking it up and converting it into arable, in order that it may be chalked, and also that we may the better be enabled to see how it should be drained. Although the general surface of the field was a clay soil, yet there was a bird's eye spring in it with a quicksand at bottom, so that we could run a pole down for a depth of 12 or 14 feet. This we relieved by a drain, but the great mistake we made in laying out the drains in this piece of land was a disregard of the quicksand spring, for this ought to have shown us, as it eventually did, that although the land was a strong clay at the top that it might be made wet in consequence of water lying deep in the subsoil. In our inexperience, however, at that time we disregarded this matter, and proceeded upon the plan of thorough draining the land with pipe-drains at 16 feet apart and 2 feet in depth. It was found, however, after several years that the drains were comparatively inoperative, and the land too wet for profitable culture. It, however, eventually occurred to us that the land must be made wet by the water rising from a considerable depth through the veins of sand, worm holes, &c., to the surface, and in order to test this a deep hole was dug, and a quicksand bottom found at the depth of 12 feet. Now this fact proved a solution of the whole question of wetness of the surface soil, and in considering the position of this field which had a fall of only a few feet at the upper end, yet in the lower part it had a sudden fall of 20 feet down to a brook. We therefore decided to make the brook the outfall of a deep drain, and in cutting it on entering the hill we found a deep body of impenetrable clay, which was the cause of the quicksands having no outlet, and in consequence the water rose to the surface as above stated. This deep drain which was laid 12 feet deep was a very heavy expense, but it proved a good outlay notwithstanding, for after it was finished the field continued to this day a fertile soil. The manner of cutting this drain and the difficulties we had to contend with will at a future time be explained under the heading of deep or spring draining in this Journal.

#### WORK ON THE HOME FARM.

**Horse Labour.**—The harvest, not yet being completed in the late districts, will still employ some of the horses; but at all times when they can be spared from harvest carting, &c., they should be employed in carting out manure on to the land intended for wheat, doing the fallow break first, for upon the lea ground

this work may be carried out even after heavy rains. Autumn tillage of land intended for roots next year should now have been completed, or nearly so. In the event, however, of the weather being favourable much may be done in a short time if the steam cultivator is employed, the horse following close behind dragging, harrowing, rolling, &c., until the couch and weeds are so far separated from the soil that they may be carted away. Our plan is never to burn any vegetable matters that will decay in a heap, because it will always furnish useful manure, especially for pasture land; besides, the carting to heap can be done when the weather is not dry enough for burning. Immediately the autumn tillage is done the work of preparing the land for wheat should be forwarded. The best time for sowing the land with wheat, when it is well manured and otherwise in good condition, is from the middle of October to the middle of the month of November upon all dry healthy land, but upon cold hilly land in various parts of the country wheat should be sown about a fortnight earlier. In ploughing and pressing the land out of clover lea this may be done where horses of sufficient size and power are kept, with two horses drawing a double furrow plough, and the presser following behind. This work is also done well now by most of the steam ploughing sets. We saw much work done by them last year in a very satisfactory manner, and in all cases where the work of the home farm is in arrears it may be soon brought up with the time of the year by steam power. Should the farm horses be laid up in the stables from disease or illness—such as influenza, which we have sometimes known to be the case—steam power is the only plan to prevent the seed time being lost, as every farmer is so busy at such periods that generally no horses can be hired. The quantity of seed per acre is still a vexed question, varying between 1½ to 2 bushels per acre; but we consider it should be dependant upon the time of year, the state and condition of the land, and also the variety, for some varieties will tiller out much more than others, and thus fill up vacancies which may occur accidentally.

**Hand Labour.**—The men, when they have not work in the harvest field, will now be employed in filling the manure carts, and spreading after it is laid out, and this work is, we notice, often very imperfectly done. In those cases where manure is not properly separated it is not so effective, as the wheat will then grow in irregular bunches instead of growing with that evenness which is so essential to the production of full crops of both straw and grain. At odd times the hedge trimming will have been done during the late showery weather, but if not completed the sooner it is done the better, before the new wood gets hard and wiry. We have not seen the new hedge clippers in use yet, but the hedge-trimming machine drawn by a horse may answer where the fence is of quickset, and without a bank and ditch. Neither have we seen the hand-clipping machines at work, but we think they are more adapted for ornamental hedges under the care of the gardener than for the ordinary hedges of the home farm, for unless they have been extremely well kept previously any old hard wood left would seriously impede the use of the hand-clipper, in which case it would probably not get through so much work as the old-fashioned trimming hook. Late-sown turnips will require to be hoed, and in some cases the early sown roots will require further attention by hand-hoeing again, the season having been so wet. Numerous fields of roots, although hoed at the usual period, require to be looked over again, as the grass and weeds have not died after hoeing as they do in ordinary seasons. The time is now arrived for the purchase of sheep for the winter's stock, and as they are cheap this year it may be well to lay in a full stock, at least if the provision is sufficient in roots, hay, &c., nor are feeding stuffs likely to be dear; the number of sheep in the kingdom is short, and in consequence mutton is likely to make a good price in the spring of next year. A less number of bullocks will probably be fed this year, as the root crop is backward and the bulbs small, and better adapted for sheep feeding on the land than for cattle in the boxes. In buying sheep the home farmer should be sure to take a warranty of soundness, as so many are affected with the rot, with flukes in the liver, which are now being slaughtered by the butchers. The dairy cows will now demand the attention of the home farmer, as the grass is getting short in many cases; it will then be well to give them cabbages distributed on the grass land, for nothing can excuse the home farmer if he has not a good crop of cabbages now available for cattle feeding. Rye and winter tares mixed with winter oats should now be sown, and the land should be got ready for drilling winter beans, and to manure for them lay out yard dung and plough-in, otherwise sow 4 cwt. of dissolved bones per acre and harrow-in at the time of drilling, or else sow them immediately behind the drill and harrow-in. Winter Chevalier barley, much approved of in Wiltshire and other counties, may soon be sown, as it stands well through an ordinary winter, and produces an early crop of the finest quality of malting grain. The ordinary winter barley may now be sown also.

#### CANARY TREATMENT.—No. 7.

IN my last chapter I remarked upon the points and difference of appearance between the London Fancy and Lizard breeds of the Canary compared with other kinds. Speaking of Canaries in

general I may state that the young of such soon after they are chipped give evidence as to whether they will be clear or variegated. If of the latter kind the skin will show dark patches here and there, but if the young appear flesh-coloured throughout they will almost to a certainty become clothed with a clear plumage, or at the most be only slightly ticked in their feathers. The above remarks refer more particularly to the Belgian, Yorkshire, and Norwich breeds. Upon this point I have entirely convinced myself.

Even-marked birds are the most difficult to obtain, those most in fashion possessing the much-coveted spectacle-eye marks, and the dark lesser flight feathers. As to the eye-marking, the skin of the newly-chipped birds will appear somewhat dark, but respecting the wings our curiosity is somewhat held back for a few days until the pin feathers begin to form in the wings. Then upon minutely casting your eyes along the joints of each wing you may perceive one part light or flesh-coloured, and the remainder dark, and although the young may be but three or four days old you can at once decide whether there will be anything or not of a promising kind. Upon the young bird attaining more age and developing its plumage, if fortune should favour you, exercise patience and debar yourself with as little prying into the nest as possible, or your hopes of rearing and moulting, and realising a good sale price for the bird will be at once blighted. Even-marked Canaries are valuable, and I have known many to have been sold at exhibitions for £5 or £10 each. As with Dutch Rabbits, with which I have also had some experience, there is quite as much curiosity evinced as there is with Even-marked Canaries.

Perseverance and patience, without which not much good will be effected, should be the guiding rule of all who enter into Canary breeding, especially if they breed for Even-marked Canaries for exhibition. Most fanciers prefer to breed from Even-marked parents, and certainly we look at such with more pride than those birds marked anyhow and anywhere. Still there is little chance of the young from Even-marked birds being so marked. Clear and Uneven-marked birds can be bred in abundance, but such have not so much to commend them for prizes as those more favoured with the so-much-prized marks.

Newly-chipped Canaries of the Cinnamon breed present a deeper flesh-coloured hue of skin, besides possessing the marked characteristic pink-coloured appearance about the covering of the eyes before attaining the sight, and even afterwards the eyeball presents a pink transparent appearance different from other Canaries. Cinnamon Canaries, somewhat like the Lizard birds in their earliest days of life as to colour of skin, soon show forth their general characteristic appearance when their feathers begin to bud. If any of the young should possess a foul feather it can be easily seen. This breed is frequently crossed with Norwich or Yorkshire birds for the object of obtaining marked and high-coloured specimens, and are likewise crossed with crested birds.—G. J. BARNESBY.

### VARIETIES.

At the Poultry and Pigeon Show to be held at Merthyr Tydfil on October 8th and 9th the classification for poultry is very good. Cocks and hens of most breeds are to be shown separately. There are three prizes for each class of 80s., 15s., and 10s. There are ten classes for Pigeons with two prizes in each. The entry fees are very moderate—viz., 4s. for poultry and 2s. 6d. for Pigeons.

MR. O. E. CRESSWELL asks us to state that he is, as usual, requested to collect subscriptions towards a cup for adult Silver-Grey Dorkings at the Crystal Palace Show. It will save much trouble if those who wish to subscribe will kindly send their subscriptions to his address pro tem., Bangor Lodge, Sunninghill, Berks.

THE schedule of the Oxford Show to be held on October 22nd and 23rd is also before us. There are considerable changes in the Committee, none of whom will exhibit. There are special classes for local exhibitors in lieu of special local prizes in the general classes. We do not see much change in the general arrangement of the schedule. The first prizes for poultry are in most classes £8. Why White and Cuckoo Dorkings, which have generally been well represented at this Show, should have only a £2 first prize between them we do not know. As usual at Oxford, Black-breasted Red Game are well cared for, the first prize for both cockerels and pullets being £5. There is a class for undubbed Game cockerels, and a special prize for the best unskinned Game cockerel in the other classes. Silkies disappear from the list. We regret this, for Oxford was the first show at which a class was ever given to the variety, and all the best specimens of it that we have ever seen were collected in the Oxford Corn Exchange. They are pretty as pets and useful for rearing Game and small poultry. Sultans seem taking their place as fancy birds. In Pigeons Dragons come in for the lion's share of honours with fifteen classes for every imaginable subvariety, and over £26 in prizes. An immense number of entries must be expected, for £150 would only pay the prize money. There will not this year be a special day devoted to judging, but the staff of Judges having been increased the

awards will be made on the first day of exhibition. The Judges appointed are for poultry Mr. E. Hewitt, Mr. R. Teebay, Mr. J. Martin, Mr. G. S. Sainsbury (Waterfowl); for Pigeons Mr. F. C. Esquilant, Mr. P. H. Jones, Mr. H. Allsop, and Capt. Norman Hill. There are four classes for dead poultry, which will be judged by expert poulterers.

WE have received a small pamphlet entitled "British Song Birds—a Practical Guide for Fanciers," by Richard B. Ladley, and published by John Heywood, Manchester and London, that contains some information on the management of the brown linnet, the skylark, the woodlark, the bullfinch, the goldfinch, the canary, the chaffinch, the thrush, the robin, the blackbird, the nightingale, the titlark, the siskin, and the chitty or greybob. The author remarks in the preface that "he has been a bird fancier for thirty years, and during that time has had extensive experience as to the manner of keeping, treating, and breeding British birds. Several writers, when dealing with song birds, merely describe the plumage, peculiarities, &c., but never touch on the food necessary to keep birds in good condition and song. Many good birds are thus lost because people know little or nothing of the treatment required, and when the birds are ill there is no remedy suggested to restore them. The necessary treatment required by each bird is stated, and by simply following the instructions given the birds will be kept in health and song." The instructions given are plain and clear, and the cheap little pamphlet will probably be largely distributed.

HOMING Pigeons have lately been made useful in a new fashion. The Trimby Corporation is now employing them for communication between the lightships and the land near Harwich. On Wednesday 24th two homers arrived in the town, bringing messages to the effect that a vessel was in distress near a lightship, and a lifeboat was immediately sent to the rescue.

THE next meeting of the Poultry Club will be held during the time of the Dairy Show in the Agricultural Hall.

CLUBS of the fanciers of special varieties of poultry seem becoming common. About three years ago a Game Club was started, but we fancy made little progress; then the Leghorn Club under the auspices of Mr. A. Kitchen arose and flourished, and has done much to popularise its speciality. The Langshan admirers, too, are bound together in a fraternity with common objects; and we observe in the Oxford schedule that the first prize for Sultans is presented by the Sultan Club.

WE have lately seen many very forward and well-matured chickens of the year. Though the early months were so unpropitious the abundance of insect food from the wet summer seems quite to have compensated for the check to growth from the spring winds and frosts.

THE Lincolnshire Bee-keepers' Association's fourth exhibition, in conjunction with the Long Sutton Agricultural Society's Show, will be held on October 8th and 9th. £50 is offered in prizes, with the Association's silver cup and special prizes for labourers, and there will be the usual manipulations by skilled apiarists. Mr. R. R. Godfrey, Grantham, is the Hon. Secretary of the Association.

### FOUL BROOD,

ITS NATURE, APPEARANCE, DURABILITY, AND TREATMENT.

THAT apiculture is now attracting more attention than it has received for many past years none acquainted with the history of the subject will deny. That it has advanced with giant strides through the introduction of foundations, the extractor, and other appliances that would make a long catalogue, is equally apparent; and yet amidst all this pleasant prospect, seeming to promise greater things for the future, a dark cloud—causing most to fear, and even breeding despondency in the breasts of not a few apiarists—is hovering amongst us. I allude to the existence and spread of the fell disorder foul brood. With the idea of diffusing and establishing the belief that this disease is understood on the one hand and curable on the other, so that well-founded hope may displace despair, and active measures for its annihilation be taken where it exists, I address myself again to this subject, and give a singular corroboration of our knowledge of the nature of the disease which has just occurred in connection with this Journal.

Not long since a piece of super comb containing three small brown specks was sent to Fleet Street in a little box through the post, accompanied by a request that we should determine whether it was contaminated by foul brood. The practised hand of the postmaster had applied the stamp with vigour, and the specimen was so crushed that nothing could be made of it by unassisted vision. The nose applied to the brown parts when freed from honey seemed to indicate foul brood, the nauseous smell of which (we are writing for practical, not fastidious people) is not unlike the odour of extremely dirty socks, this odour being usually very strong in infected hives, but by no means invariably so. The

microscope had now to resolve the difficulty, and by the use of an eighth objective and a deep eye piece the micrococci germs, the immediate cause of the disease, were found in tens of thousands in a speck of the brown substance diffused in a little water. The germs were accompanied by minute fibrillae, as shown in the well-known Italian diagrams. The case was clear. The hive from which this super had been taken was foul-broody, and we so advised our correspondent, from whom we received a letter stating that a similar specimen had been sent to another authority, who had replied, "There is no sign of foul brood, but there are evidences of brood having been raised in it, and there is a little pollen which adds to the discolouration." We reasserted our position that the hive was undoubtedly foul-broody, for had we not seen the disease? But in order that all doubt might be removed we paid a visit to our esteemed correspondent's apiary, and there found the fullest confirmation of our position, for the hive pointed out to us in the absence of the owner as furnishing the super from which the part in question came was actually dying out from the advancing disease. The wrong hive, however, had been shown us; so a second visit became necessary, when we again met foul brood as in the previous case, though in a less advanced condition. The brown matter was not like pollen in our opinion to the eye, but under the microscope micrococci is no more mistakeable for pollen than heaps of loaves for heaps of dust shot. This episode in the first place establishes our knowledge of the nature of the disease, since its presence was detected, not by looking at combs half filled with rottenness or examining decaying grubs, but by discovering the presence of the cause of the disorder—the micrococcus, which, by growing in the body of the larva as yeast grows in rising dough, soon delivers it over to death and decomposition. It may be asked, Although this microscopic examination is interesting, is it ever likely to be useful? The answer is undoubtedly Yes, and a case in point has been given; for had our opinion not been asked we take it that our correspondent's apiary would have been ravaged if not ruined by the disease before he had become sufficiently alive to its presence to have taken measures for its suppression. But beyond such cases brood not unfrequently dies from chill, and is known by the name of chilled brood, the appearance of which is so like to foul brood that the merely practical man would often be quite unable to determine whether the before-mentioned disease was present or not. Every bee-keeper of experience has met this puzzle, which the microscope alone can resolve. With the exception just mentioned the appearance of infected combs, if the disease has made any progress, is so characteristic that all but the merest tyro could pronounce upon it. In looking into a card of unsealed grubs, which while healthy are all of pearly whiteness, one here and another there may be noted of a yellowish sickly tone, and these usually—instead of being posed as Swammerdam says, "curled up at the bottom of the cell like a dog asleep"—are thrusting their heads forward toward the cell mouth. This indication is very marked in unsealed brood. These grubs sometimes die before the period of sealing, and their bodies, as experiment has proved, are occasionally removed by the bees and dropped at a distance from the hive; but more generally they pass through the phases of decomposition, shrinking and turning brown, while the water continues evaporating until nothing remains but a blackish brown scale on the lower side of the cells. It is in this condition that they become the infectors of the rest of the hive, for now the minute germs of the micrococcus are given off in immense numbers, and flying through the hive find their way into every part. Other grubs are attacked until the exhalations from the dead nauseate and dispirit the whole population. The fanning at the door carries out these germs in myriads, which are thus diffused, to be taken with the indraught into neighbouring colonies. The complex hairs of the bodies of the workers must hold them in their meshes, and in fact in every corner of the apiary will soon lurk these minute possible ministers of death and destruction. But many of the grubs do not die until after they have been sealed, and so in inspecting an attacked comb we shall notice that the patches of sealed brood are very irregular in colour. Each darker cover lying over the coffin, and not the cradle of a young bee; others, which conceal the bodies of those long since dead, will be pierced by irregular holes, and the cover, instead of being convex, will be sunken and rather glossy instead of dull in surface. When the covers are removed the rotten remains brown, fetid in odour, and so viscid that they may be drawn out in threads like treacle will be discovered. With this description the owners of frame hives need have no doubts, except the suspicion of chilled brood, for which some explaining cause can always be assigned.

To the ideas of Mr. Pettigrew, as expressed by him in the *Journal* of June 19th, I have previously taken exception, but did not refer to the general sweep of his opinions respecting the carrying of the disease by the bees, and from which, if I understand him aright, I dissent in the most absolute manner. I quite agree with his fact when he says, "We have known swarms leave the disease behind them and thrive well in new hives;" but his implied inference is most dangerous, especially when coupled with the remark, "We have never known swarms from diseased hives carry the disease or germs of the disease with them." If this be

a general truth it is honest in a dealer to take a swarm from a hive saturated with micrococci, and send it into a healthy district. On the contrary, I agree with the Editor of the American "*Bee Journal*" that "it is criminal." Swarms from diseased hives may do well themselves, and yet infect the district into which they have gone, for reasons that ought to be apparent. The first of their brood may in a few cases get infected from germs carried about their bodies, and yet by the removal of the dead, as previously explained, the disease will be eradicated. Experiment has shown that introducing spores into hives does not in the greater number of instances from this reason establish the disease.

The curability of foul brood is the next point upon which I wish to insist. While we feel sure that the doctor can do us no good we will not take his medicine, and while bee-keepers believe that foul brood must run its course and work out devastation and ruin nothing will be done to arrest it. I assert its curability because I have again and again cured it, and in this position I am pleased to be able to refer to one of the most prominent, certainly one of the most scientific and successful, apiarians of our day—T. W. Cowan, Esq., Chairman of the Committee of the British Bee-keepers' Association, whose experience in the treatment of this malady has been great, but not greater than it has been successful. Mr. Cowan, in reply to a request that he would permit a publication of his methods, has favoured me with a lengthened letter in which he says—"I am quite, I think, of your opinion as regards foul brood, that it is to be cured if attacked in earnest. You know I had it in my apiary, and it was a source of great trouble to me, but I stamped it out with salicylic acid. My proceeding was to excise any very bad places, and when I found cells affected here and there I merely uncapped them and sprayed the combs with the solution of which I send you the recipe. I found generally in mild cases one application was sufficient, but in more severe ones two or three doses produced a complete cure. I found that if the cells were uncapped before they were punctured and sprayed with the solution, injecting a larger quantity into the affected cell so as to eject the viscid mass, there was no fear of the disease appearing again. In this state the viscid fluid in the cell is of a light brown, and is not permeated with spores to such an extent as when it is allowed to remain until it becomes highly coloured and the covering much depressed. I doubt very much if in this stage it is very contagious. I have no doubt the acid acts on the spores and destroys their vitality. So far so good. Now as regards the honey that is in the hive and which is supposed to contain the spores (although I must say I have never been able to detect any by the microscope), how are we to ensure their being destroyed? Simply by uncapping it and feeding the bees on syrup containing the acid, which they will store with the uncapped honey, or uncap it and give it a good spraying with the acid solution. I have done both, but cannot say if it was really required; but as I think prevention is better than cure, and as it is not much trouble, there can be no harm done.

"All my hives are scalded, and so is everything that has had anything to do with the hive, and afterwards everything is washed over with the solution. I believe the germs of the disease are carried in the air, and we can never feel safe; I therefore always put acid in all the food I prepare. I examined six of my hives and all were healthy but one, and that I thought was also healthy. It was an early swarm. This year I had thrown off a swarm and a cast, and had given me six small 1 lb. sections nicely filled. I looked on the ten frames and found no queen and no brood. There was one cell covered but not punctured, but I at once recognised it as a foul-broody one. Now the hive had not been queenless very long, as about ten days ago I saw the queen, and although she was not laying there was a small quantity of brood hatching out, and all did hatch out except this one cell; it was uncapped and injected with the solution, and the other combs and bees sprayed with it. I have no doubt it will prevent its spreading in the future, as I shall not hesitate in using these combs in uniting if I require them.

"I have examined six hives to-day, fearing to find foul brood, but have not detected a single cell in any of the other hives. Now, how did this appear? It seems to me probable that it was brought there by some of the bees from outside, or a spore might have been lurking in some of the corners of the hive and had escaped the solution. This proves to me that it is impossible to tell when it may break out in an apiary; and as we know from experience that salicylic acid destroys the spores, I think it not only beneficial but important that a certain quantity of this acid should be in all the food given to the bees. Two years ago I tried feeding the bees on syrup containing a strong dose of acid without spraying the combs, and I found that the disease gave way to this treatment; but I find the other plan, that of uncapping and spraying, the most rapid. I do not mean to say if a hive is neglected, so that all the brood is rotten, it can be cured; but if taken in time, as every apiarian would do, it has been and can be cured.—THOS. WM. COWAN."

The table of recipes Mr. Cowan encloses will explain themselves.

#### TABLE.

Salicylic acid solution for mixing with syrup for feeding bees,

painting over hives, and spraying combs, &c., for the prevention of foul brood.

Salicilic acid .....	1 oz.
Soda borax .....	1 oz.
Water .....	4 pints.

Spring and summer food for bees :—

White lump sugar .....	10 lbs.
Water .....	7 pints.
Vinegar .....	1 oz.
Salicilic acid solution .....	1 oz.
Salt .....	½ oz.
Boil for a few minutes.	

Autumn and winter food for bees :—

White lump sugar .....	10 lbs.
Water .....	5 pints.
Vinegar .....	1 oz.
Salicilic acid solution .....	1 oz.
Salt .....	½ oz.
Boil for a few minutes.	

Some remarks upon the action of salicylic acid, and the plans I have myself followed, I must reserve, through pressure of space, till next issue.—F. CHESHIRE, *Avenue House, Acton, W.*

### OUR LETTER BOX.

**KERRY COWS (H. B.).**—We do not know any place in the midlands where you can get Kerry Cows, but if you wish for any and you will send your address, we can recommend you where to get them.

**GORSE CULTURE (Huntingdonshire).**—Gorse will grow very well upon cold clay soils if the land is rather hilly and sheltered by woods, plantations, &c.; if, however, the land lies flat, and has not been drained, the ground should be clean fallowed and laid into ridges 8 feet wide, with land and water furrows properly made for the drainage of surface water. Seed may then be drilled or plants set, as stated in the *Journal* September 18th, at page 239, on the subject of cultivation and usage of gorse. If the land is very poor and in low condition 3 cwt. of dissolved bones mixed with rough coarse ashes may be strewn over before ploughing into ridges, or into the furrow before planting, and the land should be kept clean by hoeing until the plants have covered the ground, and thus prevent the weeds from injuring, which they will do as much as if the crop was mangold or turnips. The crop will then be fit for cutting in November. The cutting of the gorse should be done daily like other green crops such as vetches for current use and pulped immediately, for it will not keep but turn sour if not used directly. Nor is there any mode whereby it can be cut, dried, and preserved like hay, because it is only cut and used in the winter months when the weather is adverse for storing in rick or otherwise, supposing it could be done; but gorse cannot be used to advantage without being pulped with Mackenzie's Masticator, all the former methods of reducing it by the chaff cutter, &c. may now be given up as useless. Any field of gorse must be fenced and protected from the bite and spoil of cattle during growth. It is likely to pay more money than the growth of cereals upon cold clay land, and if the value of cereals should ever make them worth growing in the future upon such soils the gorse land would prove very productive on being broken up, and would be found permanently improved for the production of other crops.

**PRICKLY COMFREY (T. R. C.).**—*Symphytum asperifolium* is the botanical name of the plant to which you allude. It should be grown in deep highly manured soil, and though it is quite hardy a good covering of manure placed round the crowns in winter is very beneficial, the manure in the spring being pointed in with a fork. Prickly Comfrey cannot be grown too quickly, for if grown slowly by lack of nourishment it is apt to be bitter; cattle do not always eat it readily at the first, but they generally soon "take to it," eat it freely, and thrive well.

**SUGAR FEEDING FOR BEES.**—F. J. asks if a slice of sawn loaf sugar an inch thick or so would do instead of barleysugar for extra feed for winter if placed under the quilt. The answer is No. Loaf sugar is not dilutescent, and bees are unable to appropriate it, except in such small quantities and at so much labour as to make it practically useless. This you can prove thus: If you feed with condensed honey the honey crystals will be perfectly cleaned from all moisture, but will remain untouched however pressed the bees may be; and, again, bees will starve with abundance of crystals of either sugar-feed or honey-sugar in their cells.

**SUSPECTED FOUL BROOD (J. S. Catrine).**—We fear from your description that your suspicions are correct, and that your hive is foul-broody. If the hive is strong in bees you may attempt its cure with a good chance of saving it, but we would in no case recommend it being joined to another that you believe to be healthy. If you would like to feed the bees with syrup containing salicylic acid and find a difficulty in obtaining the latter Mr. Cheshire will send a small quantity if you send a stamped directed envelope to this office.

**GRUBS OF WAX MOTH IN HIVES (L. L. K.).**—The larvae are, as we supposed from an inspection of the trails previously sent, those of the wax moth, either *Galleria mellonella* or *Achroia grisella*. The mother moths seek access to the hives during the nights of the warmer weather, but scarcely succeed except in those that are very weak. The eggs are then deposited on the combs, while the tiny grubs hatching therefrom feed upon the wax, boring through the middle of the waxen cell work and spinning as they advance a tubular web, which the bees so much dislike that they only remove it by biting out the surrounding comb and letting it fall. If many of these grubs are at work they soon destroy the comb so utterly that its wreck drops bodily, grubs and all, on to the floorboard. If the hive is very weak in bees and the moth has strong hold measures ought to be taken, but if the bees are numerous they will make hereafter proper repairs. Combs left without bees are often totally destroyed by these pests. The mass the box contained consisted of wax plates dropped during comb building, the tubular webs previously referred to and the dejectamenta of the larva looking like grains of gunpowder.

**QUEEN FERTILE OR NOT (Idem).**—If the hive contains no brood, and the queen has not in your knowledge laid at all, it is impossible to determine

whether she has mated. A virgin queen is usually very shy and hides amongst the bees, but this is at best a most uncertain indication. Put your frames into a small hive or confine your bees by a division board to a space they are well able to fill, and continue to feed gently. If in three or four days no eggs are found we should without hesitation destroy the queen.

**INTRODUCING LIGURIAN QUEEN (Idem).**—We often introduce Italian queens later than now, but if the process be unsuccessful and the failure be unnoticed, the hive is doomed. If a hive has been long queenless, or, which is the same thing in this respect, had for long a barren queen, it is usually better to unite it to another for two reasons. First, the bees are old and will not survive in sufficient numbers to keep the hive in good order up to spring, and the queen's progeny cannot be reckoned upon, as not very much brood will now be raised; and, secondly, the bees being old will only accept a queen with much persuasion, and may even reject the proffered mother in spite of every effort.

**BEES AT THE MOORS (Idem).**—Bees will hardly now improve at the moors in any locality. We should eat them at once on their winter stands, and see to making all snug, feeding them or not according to circumstances.

**THE BEE TENT (A Subscriber).**—The bee tent has not been overlooked, since a description was given of it in our issue of June 28th last. Driving or drumming has been one of the principal features of the manipulations during the past summer, and this operation will be made the subject of an article in a few weeks.

**WINTERING SKEPS (H. C. Transfield).**—You may bung the top hole, but by no means stop every fraction of ventilation round the edge by fixing down to the floorboard with clay or mortar. Reduce the mouth somewhat, but do not make it less than 1 inch long by ½ inch high.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 33' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.						Rain.
1879. Sept.	Baromet- er at Sea and Level	Hygrome- ter.		Direction of Wind.	Temp. at 9 A.M. 1 foot	Shade Tem- perature.		Radiation Temperature.		In. sun.	On grass.	
		Dry.	Wet.			Max.	Min.	Max.	Min.			
We. 24	Inches. 29.471	deg. 50.4	deg. 48.0	W.S.W.	deg. 55.1	deg. 61.3	deg. 46.8	deg. 108.2	deg. 36.1	In. 0.330		
Th. 25	30.118	50.3	49.5	W.	54.0	60.7	40.1	109.3	36.1	—		
Fri. 26	30.330	52.5	49.8	W.	53.1	53.7	41.0	115.2	35.8	—		
Sat. 27	30.399	53.7	49.7	N.	53.6	53.0	47.0	109.7	43.3	—		
Sun. 28	30.153	54.7	54.2	S.W.	54.0	54.0	47.9	96.3	42.8	0.409		
Mo. 29	30.089	55.6	52.5	N.E.	54.8	60.1	50.6	85.0	52.3	—		
Tu. 30	30.169	54.5	53.5	N.E.	55.0	63.7	50.3	84.9	49.2	0.356		
Means	30.098	55.4	50.7		54.2	62.4	46.7	101.3	43.4	1.136		

### REMARKS.

24th.—Unsettled morning though with a good deal of sun; sudden storm at 10 P.M. with thunder, hail, and heavy rain, 0.34 inches in ten minutes; bright sunshine again by 0.35 P.M.; one or two heavy showers in afternoon; fair evening.

25th.—Fine bright day throughout.

26th.—Fine bright day; slight showers in evening.

27th.—Rather dull in morning; fine bright afternoon.

28th.—Fair morning; gusty wind in the middle of the day; rather dull in afternoon; wet evening.

29th.—Slight drizzle in first part of morning, afterwards fair but not very bright.

30th.—Rather cloudy, but on the whole fair.

A week of fine but rather cool weather, all the thermometric means with the exception of the maximum in sun being several degrees below those of last week; the mean of the barometer readings is rather higher than last week.—G. J. SYMONS.

### COVENT GARDEN MARKET.—OCTOBER 1.

Now the fresh fruit is nearly over our market assumes a quiet aspect, and the little outdoor stuff reaching us is far from satisfactory. A good many house Grapes are now being sent into the market, causing values to be low.

### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .....	½ sieve	2 6 to 8 6	Neotarnes ....	dozen	4 0 to 12 0
Apricots .....	dozen	2 0 8 0	Oranges .....	½ 100	4 0 12 0
Cherries .....	box	0 0 0 0	Peaches .....	dozen	4 0 15 0
Chestnuts .....	bushel	12 0 16 0	Pears, Kitchen ..	dozen	0 0 0 0
Figs .....	dozen	1 6 8 0	dessert .....	dozen	2 0 4 0
Filberts .....	½ lb.	0 7 1 0	Pine Apples .....	½ lb.	3 0 6 0
Cobs .....	½ lb.	0 7 1 0	Plums .....	½ sieve	3 0 6 0
Gooseberries .....	½ sieve	0 0 0 0	Raspberries .....	½ lb.	0 3 0 0
Grapes, hothouse ..	½ lb.	1 6 4 0	Walnuts .....	bushel	0 0 0 0
Lemons .....	½ 100	8 0 12 0	ditto .....	½ 100	0 0 0 0
Melons .....	each	2 0 5 0			

### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .....	dozen	2 0 to 4 0	Mushrooms .....	pottle	1 0 to 2 0
Asparagus .....	bundle	0 0 0 0	Mustard & Cress	punnet	0 2 0 0
Beans, Kidney .....	½ sieve	2 6 3 0	Onions .....	bushel	2 6 4 0
Beet, Red .....	dozen	1 0 2 0	pickling .....	quart	0 4 0 0
Broccoli .....	bundle	0 9 1 6	Parsley .....	doz. bunches	2 6 0 0
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsnips .....	dozen	0 0 0 0
Cabbage .....	dozen	1 0 2 0	Pears .....	quart	0 2 1 0
Carrots .....	bunch	0 4 0 0	Potatoes .....	bushel	3 0 4 0
Caulicums .....	½ 100	1 6 2 0	Kidney .....	bushel	4 0 5 0
Cauliflowers .....	dozen	8 0 6 0	Radishes .....	doz. bunches	0 0 0 0
Celery .....	bundle	1 6 2 0	Rhubarb .....	bundle	0 0 0 0
Coleworts .....	doz. bunches	2 0 4 0	Salsify .....	bundle	0 9 1 6
Cucumbers .....	each	0 4 1 0	Scorzonera .....	bundle	1 0 0 0
Endive .....	dozen	1 0 2 0	Seakale .....	basket	0 0 0 0
Fennel .....	bunch	0 6 0 0	Shallots .....	½ lb.	0 0 0 0
Garlic .....	½ lb.	0 6 0 0	Spinach .....	bushel	2 6 4 0
Herbs .....	bunch	0 2 0 0	Turnips .....	bunch	0 6 0 0
Leeks .....	bunch	0 2 0 4	Vegetable Marrows	each	0 3 0 4



## WEEKLY CALENDAR.

Day of Month	Day of Week	OCTOBER 9—15, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.		Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.			
9	TH	Sale of Nursery Stock at Uckfield, Sussex.	60.7	45.4	51.5	6 15	5 30	12 29	2 34	28	12 29	2 34	28	12 29	282			
10	F		61.6	48.3	52.4	6 17	5 17	morn.	2 37	24	12 55	2 37	24	12 55	283			
11	S	OLD MICHAELMAS DAY.	61.7	48.4	52.1	6 19	5 15	0 45	2 16	25	13 10	2 16	25	13 10	284			
12	SUN	18 SUNDAY AFTER TRINITY.	59.5	41.4	50.3	6 30	5 13	2 4	2 34	26	13 24	2 34	26	13 24	285			
13	M		60.7	41.8	51.2	6 22	5 11	3 26	2 50	27	13 40	2 50	27	13 40	286			
14	TU	Royal Horticultural Society—Fruit and Floral Com.	59.9	40.5	50.3	6 34	5 9	4 50	4 8	28	13 54	4 8	28	13 54	287			
15	W	[mittes at 11 A.M.]	59.0	40.5	49.8	6 35	5 6	6 18	4 29	29	14 7	4 29	29	14 7	288			

From observations taken near London during forty-three years, the average day temperature of the week is 60.4°; and its night temperature 41.8°.

## VINES IN POTS.

ON page 223 Mr. Smith, with the help of Mr. Miller, gives a very lucid description of the method of quickly raising a stock of pot Vines, successfully adopted by the latter. Mr. Smith also invites a further discussion on the more extended cultivation of the Grape Vine. The subject is not only generally interesting, but most important; consequently every fresh advance (which Mr. Miller's practice has every appearance of being) is readily welcomed by the readers of this Journal. No doubt unfavourable criticisms will be passed on it. I for one, in a discussion with a practical friend, having argued against it, I put what I thought a "ticklish" question when I asked, Where in an established vinery are we to place a plank bearing a number of 10-inch pots, seeing that the young Vines must not be shaded or they will be of little value? "It is a local contingency to be overcome by local ingenuity," was the brief reply. In the end I freely admitted that he is quite right, and that there are plenty of spots where I could, and very probably shall, test this, as far as I know, original idea of Mr. Miller's. But it is nurserymen and others who grow Vines in pots largely every year that I am inclined to think will be the most benefited by the adoption of this practice, for they are better able to give up a house or houses, as the case may be, entirely to the growth of young Vines, and thus require but a small amount of local ingenuity to insure success. The saving of fuel and a crop of Grapes into the bargain alone ought to be an inducement to give the plan a fair trial. Where, however, the house room is limited the difficulty will be greater, and then comes the question, Where are the Vines to be grown? All certainly must depend on local circumstances. In some instances one or two Vines might be layered at intervals along the front of a house, and the ends of vineries might be especially utilised, as it is not at all necessary that the Vines be trained vertically, as they grow and fruit remarkably well trained perpendicularly. Peach houses, forcing pits, &c., too, all might easily be employed to propagate a few or many Vines.

Before reading Mr. Smith's remarks I had intended to offer a few observations on the subject of growing early Grapes, and will take the present opportunity of doing so. Where there is a demand for early Grapes, or at all events where it is incumbent on the gardener to keep up a continuous supply, the earliest are oftentimes cut from Vines in pots. These, unless unusually well grown, seldom produce a very valuable or presentable supply, and only serve to prevent the hard forcing of the established Vines. The object in view is a good one, and there is no reason why it cannot be attained, and also a supply of excellent Grapes obtained probably equal, as far as flavour is concerned, to any sent in to the table during the whole season. Much depends upon the preparation of the young Vines. The advance made by nurserymen of late years in this branch of their business is most marked, and it is surprising to see the quantity of splendid short-jointed canes they grow and

distribute. Formerly some at least used to pot them in the siftings of the rubbish heap; now they use good fresh loam and clean well-drained pots, and this much-improved treatment is very manifest in the healthy state of the roots and the quality of the canes.

Although the system of keeping the Vines in pots for two years previous to fruiting may appear more laborious and expensive, yet it is the practice I strongly recommend, believing it to be the best. After all it is not so much trouble as at first sight appears, and cut-backs have the advantage of being easily started early to form fruiting canes. In addition they, as a rule, are certainly stronger, shorter-jointed, and firmer than are those canes rapidly grown from eyes in one season. What I mean by firmness or solidity is the comparatively small amount of pith in the canes—a desideratum obvious to those possessing a practical knowledge of the Grape Vine.

Any time during January or February we commence operations by inserting a number of eyes into an ordinary shallow box, preferring this to small pots, and place them on a moderate hotbed in a vinery. When the Vines have rooted the best are potted off singly into 5-inch pots, returning them to a hotbed till established; after which they are grown-on either on the stages in front of the vinery or early Peach house. No further trouble is taken with them beyond supplying water regularly until after they are sufficiently hardened off to be turned out in the open. Any sunny spot does for them, and they require less water if plunged. They are sure to ripen, at least as much as is required, and can be wintered in a cold frame. Early in January they are introduced into heat and disbudded, leaving two buds at the base, one of which and also the old cane to be cut clean away when once the leader is fairly started. Disbudding is preferred to pruning, simply because Vines do not bleed if cut when in full growth. When the young Vines have broken they are shook out and potted in 12-inch pots. I have tried repotting the young Vines into 5 or 6-inch pots and shifting into the fruiting pots, but find that the roots do not spread so readily into the surrounding soil, and the ball is apt to get dry to the detriment of the roots, and the fresh soil is more liable to become sour before the roots have taken possession of it. The soil used consists of two parts of turfy loam to one of partly decomposed horse droppings—that scraped from the roads being preferred, and failing this we add road grit, as well as the usual sprinkling of bone dust. During the potting operation we throw in a few coarse pieces of broken bricks and mortar, their use being principally to prevent the roots from reaching the sides of the pots too soon, which otherwise they would do. The Vines are potted very firmly, and the pots used are clean and well drained. They are never placed in bottom heat, as that causes a too succulent growth; on the contrary, they are grown on the stages and trained up the roof between the permanent Vines, and also at intervals up the roof of the Peach house. They of course require a great amount of water of the same temperature of the house, in fact must never be allowed to flag for want of it, or the consequence will be the loss of some of the buds or leaves. We grow them to no particular length, but

head them back according to the strength of the cane, the longest being about 6 feet. The laterals are kept pinched back to one joint at each pinching. When the canes are commencing to harden and colour the temperature is either lowered or they are transferred to a cooler house for a time, and finally, when the canes are quite brown, to vacant spots on either south or west walls, to which they are trained, or rather fastened. When all danger of their pushing out the fruit buds is past the laterals are cut clean out and less water is given.

The first season when I commenced to fruit Vines in pots they were plunged in a hotbed, but the roots soon spread into the dung from the bottom of the pots, and also by being covered up and encouraged from the top as well. This, as they succeeded beyond expectation, induced me to plant them out in a properly prepared compost, which practice I for the future intend to follow. The house in which we fruit them has a low span-roof with a pit in the south or front side, which partially encloses the hot-water pipes, and on the back roof a *Stephanotis* planted in a tub is trained. The pit is roughly drained, and filled with a compost of loam, garden soil, and good dung of any description in equal quantities, with an addition of a sprinkling of mortar rubbish and broken bricks. Slates are placed to keep the soil from the pipes, and they also serve to conduct the heat through the bed. The soil near the slates and also the ball require to be frequently watered, in fact almost daily, especially when the pipes have been much heated in the former case, and in the latter when root-action is brisk, and the whole bed about once a week. In the early stages clear tepid water is used, but when the Vines are well started the ball receives weak liquid manure at every watering, and later on the whole bed also. A good mulching of manure preserves and encourages the top roots and helps to keep in the moisture. Guano in experienced hands is the simplest, but liquid manure made from sheep droppings, pigeons' or chickens' manure, soot and lime, and mixed in sufficient strength to well colour, is equally as effective and safer to be used. We start the Vines in a temperature of 55° by night, increasing to 60° by day, and when root-action has fairly commenced this temperature is raised to 60° and 65°. To be brief, we follow the usual routine of tying back to cause them to break evenly, steaming, syringing, &c., often described in this Journal. Neither the temperature nor the humidity of the house was varied but little at blooming time; neither is it necessary where the root-action is so good. All, including the Muscats, set well; but as the *Stephanotis* had to be considered, the high temperature kept up when the Grapes were colouring to a certain extent affected the colour of the black, but not of the white varieties. We, however, lessened the supply of water, and to this and the high temperature must be attributed the very good flavour, as we had but little solar heat to sweeten them.

Treated as I have attempted to describe, the Vines were wonderfully fruitful, every joint producing several bunches, and these when reduced to a moderate number, according to the strength of the Vine, grow out surprisingly. Six bunches are enough for a strong Vine, and the smallest we fruited this year, a Black Hamburgh 4 feet long and the cane only 1½ inch in circumference, carried three bunches, which collectively weighed 9 lbs., and all the others carried heavy, though certainly not quite proportionately heavy, crops. I know of one solitary instance where equally as heavy crops have been taken from Vines in pots which were never even plunged, but not so early as we, although we did not start the Vines till January 9th and cut Grapes April 22nd. Our system may be laborious, but not so much so as that followed with the above-mentioned Vines in pots, as they required almost hourly attendance.

Black Hamburgh and Foster's Seedling ripen well together; and to follow these I recommend Madresfield Court and Muscat of Alexandria, as both succeed remarkably well under the foregoing treatment. They would carry a good crop the second year if properly ripened and rested; but we prefer cutting them out, not only on account of wanting the room for Melons, but because the young canes produce much the largest bunches. I have seen Vines planted in low span-roof houses succeed admirably for a few years, but both the canes and border under this mode must be renewed occasionally, say once in five or six years. Our young Vines will not be planted till January this year on account of their intended site being occupied by a crop of Tomatoes in pots, which are intended for the November and December supply. We, however, can prepare the pit, as the pots are on a moveable trellis which covers the pit. The soil will get thoroughly warmed, and if the young Seakale roots are fit to lift in time it will be planted with them for the

Christmas supply. The Vines will be introduced into heat in November providing they are ripe enough, which I question, in spite of being housed earlier than usual; but this is an exceptional season. I do not claim originality for my practice, but that it both deserves to be more generally followed, and is also in advance of the old practice of fruiting pot Vines I at least am fully persuaded; and this must be my apology, if one is needed, for offering these lengthy remarks on the subject.—W. IGGULDEN.

[No wood could be finer than that submitted; it is as hard as oak, and the pith is scarcely visible.—Eds.]

## BUXTED PARK,

THE SEAT OF COLONEL FRANCIS VERNON HARCOURT.

HARD by the little station of Buxted, on the line of railway from Brighton to Tunbridge Wells, is Buxted Park, with the house, a massive pile of the palatial Italian style of architecture, standing upon an eminence surrounded by lofty old trees. There are four entrances to the park, and each has its avenue; that by which I went to the garden was a noble one of very lofty old Scotch Firs, not everywhere in uniform ranks, for the original lines are now broken and varied. Some are level with the road, others upon the sides and top of banks, irregular, and yet in perfect keeping with the rows of column-like stems that still exist. It is an indication of rare good taste and sound judgment that no attempt at replanting was visible in any of the vacant spaces of this old avenue. The common desire to do so is a mistaken one, as results generally show. Beyond the avenue the undulating surface of the park opens out picturesquely, and we obtain glimpses of the house and a church close by.

The shrubberies near the house are the first portion of the gardens that come into view, and are remarkable for the masses of Rhododendrons, most of them probably 12 feet in height, arranged in clumps and belts, with an ample expanse of grass lawns and various fine examples of some of our best varieties of Coniferae. An *Abies Smithiana* (morinda), the Weeping Spruce of the Himalayas, about 30 feet high, with the pendulous habit well developed, is the finest example of this graceful Conifer I have seen in Sussex. There is also a magnificent example of *Picea pectinata*, with a huge bole some 6 feet in diameter; and also much other fine timber dispersed among the shrubs on the north and north-east side of the house. It is under the overhanging branches of a clump of these trees that one comes out from the shrubs to a highly finished arbour standing upon an elevated position, with a Rose garden in front of it and overlooking a fine stretch of wooded park and swelling uplands beyond. The Roses were all "faded and gone" at the time of my visit. Numerous Gladioli planted among the Roses were, however, in full beauty. This is a step in the right direction well worthy of imitation, imparting, as it does, the charm of variety and gaiety to what is usually a dull and unattractive scene at this season of the year.

From the Rose garden a terrace walk, broad and straight, runs for a considerable distance towards the house, with a chain of flower beds on one side and a belt of shrubs on the other. It forms an admirable boundary to this side of the dressed grounds, being sufficiently elevated to exclude cattle and to afford fine and varied views over the park, with vistas of hills and valleys through the tree openings, for the park stands in the very centre of some of the richest scenery of Sussex. The beds were well filled and gay with summer flowers, a pleasing variety being given by the introduction of an occasional bed of choice annuals among the Pelargoniums and fine-foliage plants, each bed containing some new introduction—some novelty but little known, of which I may select *Phlox Drummondii grandiflora splendens* as proving well worthy of its lengthy name. The flowers are each a perfect circular disk, with a broad marginal band of deep crimson, and a bold white centre with delicate pencillings of crimson. Near the last flower bed of the chain the walk branches right and left past an arbour, standing at the entrance of a grove of old timber, to a fernery around a pool of water amidst the trees. We turn aside up an ornamental flight of stone steps to the upper and larger terrace flower garden adjoining the house. The turf-clad slopes on each side of the steps, that in ordinary hands would probably have presented no feature of interest, have been turned to account as a home for such plants as *Desfontainia spinosa*, *Hydrangea paniculata grandiflora*; *Rhus Cotinus*, a large specimen, with a cloud of its charming

feathery inflorescence in full perfection; and *Bambusa falcata*. The flower garden is of considerable extent, filling a large quadrangle and a wide approach from the steps and carriage front. The design is somewhat formal, yet in good keeping with the position and its surroundings—the house on one side, a conservatory on another, stone balustrading with numerous tazas and vases enclosing the remainder; a central fountain, with a chaste architectural design, and some fine Irish and Golden Yews.

No contrast could be more striking, no change more agreeable, than that which greets us as we turn from the bright colours in the flower beds to the fernery with its hundreds of Ferns, all growing so freely in the subdued light of a natural arcade. No position could be more suitable for a fernery, and I wish to draw special attention to it because there are so many similar tree clumps or sheltering belts in other gardens that might be turned to account with very little labour. Onwards from the fernery a winding path takes us to the kitchen garden, some 3 acres in extent, enclosed by a high wall covered with fruit trees. Plane trees on the wall were laden with a heavy crop of fruit; so too were Morello Cherries, which, like the trees at Chiswick, have the growth left unpruned and growing cut from the wall, and are consequently far more productive of fruit than those which are pruned hard and kept close to the wall. It is unnecessary to dwell upon the vegetable crops. They were abundant and good, and the condition of every part of the garden was highly creditable to Mr. Prineep, the able gardener, the excellent results of whose practice show clearly that he gives close attention to every department.

The glass houses are numerous, and are arranged in a compact block on one side of the kitchen garden. Vineries, with plenty of good Grapes; Peach houses equally satisfactory; span-roofed houses, with Melons, Cucumbers, pot Vines for early forcing, Plums in pots laden with fruit; a house just filled with a collection of Zonal Geraniums for winter flowering, which will enjoy a temperature of 50° throughout winter, every plant so well grown as to be suitable either for table decoration or to afford a supply of cut flowers; an exotic fernery; a pair of span-roofed stoves with central stages devoted to miscellaneous plants, and side stages filled principally with Orchids, all in flourishing condition. Numerous pits, all usefully employed; one containing a fine lot of Figs in pots in full bearing; another Kidney Beans, to follow the last crop out of doors; another a sturdy batch of *Poinsettias*, enjoying a gentle bottom heat, but having the lights drawn off in the day, with the plants fully exposed; another with crimson and yellow-berried *Rivinas*. But it is unnecessary to enumerate further. In justice to Mr. Prineep I must add that from the conservatory, with its choice Palms and fine-foliaged plants, downwards to the frames, in which cuttings of bedding plants were being inserted, everything was well done. —EDWARD LUCKHURST.

### GRAPES WITHOUT FIRE HEAT.

I, LIKE others, felt some surprise when I read about Mr. Muir's Grapes being ripe "without fire heat" some time since, but none when I learnt that he had a fire in the house. Everyone who knows anything about the growing of Grapes is aware of the great advantage of fire heat to start the Vines into growth; therefore I do not consider Mr. Muir is correct when he said that his Grapes were grown without heat. Mr. Hilton is in the same category. My Grapes grown in my plant house, which had a fire all the winter and is still full of plants, were ripe some time ago, and were fine in colour, bloom, and size, but I should not think for one moment of saying they were grown without fire heat. My second house has no fire nor pipes, and therefore is essentially a house without fire heat.

This year the dull weather has been much against my being successful, still I think I shall shortly ripen the following varieties in this order:—"The Artist," a seedling of my own; the berries are now black, and I have cut a bunch of good flavour. This is the earliest Grape I have, nearly a fortnight before the Black Hamburg in the same house. The Champion Muscat will, I think, be next, then the Black Hamburg, then Venn's Muscat. This is the most marvellous bearer I ever had. I have now a second crop coming on in my house where heat was applied, and think they will ripen. Next will be Madresfield Court and the Black Alicante. These are all in a cold house without any fire heat. In my ground vinery none will ripen this year but a bunch or two of Madresfield Court and the Champion

Muscat. Whilst I am writing on the subject I may state as my own opinion that I consider the Muscat of Alexandria, the Champion Muscat, the Duke of Buccleuch, Venn's Muscat, and the Black Hamburg the best of all Grapes. The Madresfield Court is a fine Grape, but cracks with me do what I will. By the way I like the Trentham Black: it is rich and good; and for flavour, colour, and bloom "The Artist" is not to be despised. —HARRISON WEEB.

SINCE writing my letter on the above subject (page 249) I have seen some Black Hamburg Grapes that had been ripened without any fire heat whatever, for there is nothing provided to heat the house. The house I have referred to belongs to a farmer, and I am told the Vines bear annually a good crop of Grapes. Perhaps this may be of some interest to "A. C. M." and others who may have vineries without any provision for heating them. —G. HILTON, *Great Tatham, Essex.*

### HAMPTON COURT.

THE flower beds here, although not so brilliant as they were last season, are again remarkably well planted, and but for the long-continued unfavourable weather would have been very grand indeed. No attempt is made at subtropical bedding, simply because they have neither specimens suitable for the work, or in fact sufficient house accommodation to rear and keep them in. In none of the public parks, however, are either the ordinary summer bedding or carpet bedding better done, the designs for the latter being very original and good. Mr. Graham, the able Superintendent, now annually issues a fresh edition of an extremely handy little "Guide" to the gardens, &c., which not only contains the key to the arrangements of all the beds, and for this reason alone very requisite to the innumerable visitors, but also many practical hints upon the propagation of a great variety of bedding plants, numbers of excellent arrangements, diagrams for carpet beds, &c., which would be very useful to many in their future work of arranging, &c.

There are nearly one hundred large beds in all, besides a very long border, and some idea may be formed of the great variety they present when it is stated that there are but one or two pairs among them. It will be noticed in the following description of a few of the most attractive beds that the edgings, and more especially the "inner edgings," are not single lines but good broad bands, and very effective they were too. The numbers given correspond with the beds, and the description is taken from the "Guide." The first to be noticed is No. 6. Centre, *Pelargonium Crystal Palace Gem* and *Viola Blue Perfection*, edged with two rows of *Iresine Lindeni*; outside edging, *Symphoricarpos montana variegata*. No. 10.—Centre, *Pelargonium Lucius*, edged with two rows of *Abutilon vexillarium variegatum*; outside edging, *Alyssum saxatile variegata*. No. 15.—Centre, *Pelargonium Bijou* and *Viola Favourite*; edging, *Coleus Verschaffeltii*. No. 19.—Centre, *Pelargonium Mrs. Pollock* and *Viola Tory*; edging, very broad, *Coleus Verschaffeltii*. No. 29.—This was very striking. Centre, *Pelargonium Crystal Palace Gem* and *Viola Tory*, edged with *Iresine Lindeni*; outer edging, *Euonymus radicans variegata*. No. 52.—Centre, *Pelargonium Bijou* and *Dactylis glomerata*, edged with *Iresine Herbstii*; outer edging, *Euonymus radicans*. As will be seen by the foregoing, many of the centres are mixed. They are very effective; and, as Mr. Graham pointed out, if the summer prove hot and dry the *Violas*, which are principally used with *Pelargoniums*, will perhaps fail, but on the other hand the latter flower freely. This season there was but little bloom on the *Pelargoniums*, but the *Violas* are very showy, and contrast admirably with the silver or golden variegated foliage of the former. The arrangement, therefore, is very effective and safe. Among the new varieties of *Pelargoniums* employed the best appeared to be Dr. Denny's *Commander-in-Chief*, the truss of which was very good, the flower of great substance and of a rich scarlet colour, and is apparently a good variety for either wet or dry seasons.

The carpet beds were very good indeed, but without diagrams it is useless to attempt to describe them, and we will confine our remarks to a list of a few of the plants used. The favourite green foliage plant is *Herniaria glabra*, being less trouble than the *Mentha* and quite as effective. Several varieties of *Alternanthera* were used. *Amœna* and *magnifica* were very bright, but *paronychioides* was the only variety that filled up well. Several *Sempervivums* were used, *arachnoideum* and

soboliferum being very noticeable. *Kleinia repens* proved a very useful succulent for lines, &c., and *Leucophyton Brownii* was largely and effectively used. *Echeveria Peacockii* is considered by Mr. Graham to be the best of that useful class of plants. It may be described as being a great improvement on *Echeveria secunda glauca*, and can be used in a similar manner to that popular variety. *Antennaria tomentosa* and *Veronica incana* are good silvery foliage plants, and are quite hardy and very effective. Mr. Graham has a number of canvas covers to protect the carpet beds, by this means prolonging their beauty long after the usual time.

### DUPLICATE ROSES.

THE readiness with which the worthy Secretary of the National Rose Society is willing to undertake the task of obtaining the various opinions of exhibitors respecting the vexed question of duplicate Roses shows plainly there is a necessity of something being done in the matter. I think the difficulties he fears would not amount to much if he conducted his inquiries somewhat after the manner of Mr. Hinton's Rose election, and so let the majority carry the day. Then if the National Society acted on the decision of the Committee minor societies would very soon follow in the track, and the thing would be done.

Though such an authority as Mr. Wm. Paul may be able to identify equally good blooms of the three most nearly alike—viz., Maurice Bernardin, Ferdinand de Lesseps, and Exposition de Brie, and much as I respect his judgment in everything connected with the Rose, still there are others who act as judges who will not admit that there is any difference between them, and consequently fail to detect any. Mr. C. P. Peach says he has grown all the Roses mentioned as duplicates and cannot agree to their identity, with but one exception—Ferdinand de Lesseps and Camille Bernardin. Surely this makes confusion more confounding, as I never heard that these resembled each other in the least. He says, too, that Exposition de Brie is perfectly distinct in habit from any other Rose. Now the habit of a Rose cannot be judged of by a single bloom, consequently that is nothing to enable anyone to distinguish it by on an exhibition table.—OXONIAN.

### HARDY FRUIT AND FRUIT JUDGING AT NEWCASTLE.

IN reference to the remarks made by the Rev. C. P. Peach in the *Journal of Horticulture*, page 248, respecting hardy fruit and fruit judging at the late Show, I assure him that the collection which obtained the first prize was all grown in these gardens without any protection, with the exception of the single dish of Goliath Plums. I certainly think the Committee have taken all the necessary precautions in order to keep the collection strictly hardy, seeing that they neither allow Peaches, Nectarines, nor Apricots to compete as hardy fruit. With regard to Mr. Peach's remarks respecting the collection of eight dishes of forced fruit, I thoroughly endorse his opinion. I felt great surprise at the decision, and several eminent fruit-growers present were unanimous in their opinion that it was a flagrant mistake, and advised me to make a protest to the Committee. Upon making a protest I was courteously received by the Committee, whom I requested to examine the fruit, which they did before a group of disinterested observers, and when they lifted the suspected Melon from the dish they found (small as it was) that it was so far decomposed as to be completely flattened by its own weight. I then requested the Committee to present my verbal protest to the Judges, which they did most willingly. The Judges' reply was that they were enabled to justify their award without considering the state of the Melon. This I thought was most unjust, as they were bound to consider the condition of all eight dishes, and if, from whatever cause, one dish is found not admissible it disqualifies the rest.

I had no intention of bringing the matter before the public until urged to do so by many of my friends, who thought it a valuable subject for the perusal of exhibitors and those who have the compiling of prize schedules for the ensuing year. If all prize lists for fruit were prefaced with a request that "all fruit must be ripe and fit for table" it would afford protection for judges and competitors alike.

There is also another irregular and very unsatisfactory practice noticeable at Newcastle as well as at almost every other fruit show—that is, quantity being preferred to quality in col-

lections. I think the number of fruits required to constitute a dish should be stated, which can easily be done with all kinds with the exception of bush fruits, which may safely be left to the exhibitor's discretion.—R. WESTCOTT, *The Gardens, Raby Castle, Darlington.*

### PALMS.

I KNOW of nothing so suitable for general decorative purposes as the beautiful and much-enduring Palms, which are coming into more notice every year. There is a peculiar interest about them, arising to a great extent from their frequent mention in Holy Writ, and also from the associations connected with warm eastern and southern climates, which the very name of Palm seems to call up immediately before our minds. In almost all, or perhaps I might say in all, hot climates Palms of some sort form a conspicuous feature of the prevailing vegetation. In the midst of our own dark cheerless winter, when we are enduring bitter east winds and the early Snowdrops are shivering in the blast, we hear from our consumptive friends in their voluntary exile in Algeria or Mentone of the warm sunshine lighting up Palms and Citrons and Olives, and the ground being already bright with Hepaticas, Cyclamens, and wild Hyacinths, and we seem to be in a warm climate ourselves for a moment when we read of the many charms of the sunny south. Not that I for one would wish to change our English climate, capricious though it may be, for any other which I have met with or read of in other lands. We cannot have the warmth of their delicious winters, but neither have we the intolerable heat of their parching summers. If your business requires you to stay in one place all the year round, depend upon it there are few countries which can equal in climatic advantages our own seagirt isle.

I fancy we are much behind our continental neighbours in using Palms for decoration. I remember many years ago seeing in the market at Brussels very good Palms in 5-inch pots at one franc each. I think they were either *Corypha australis* or *Latania borbonica*. They would have speedily grown into handsome plants, for, as every grower of Palms knows, when once you have got them out of the baby age they make much more rapid progress than before. I noticed in Covent Garden this spring some beautiful little plants of *Cocco Weddelliana* in thumb pots at a very low price. I should have carried them off with me, but it is hard to take possession of a pot plant in the middle of London. Especially is this the case if you are on a foreign tour, and things look suspicious, and the porters in their blue blouses are jabbering their own patois all around you. I could tell some stories of odd dilemmas in that way, but I must go on with the Palms.

It is wonderful how long some of those Palms which do not require much heat will stand the dry air and the occasional draughts of the drawing-room. I had a fine specimen of *Phoenix dactylifera* in the drawing-room the whole of last winter and far on into the late spring, when it was sent out into the vinery to recruit. This plant, with many others, I raised from seed, which makes all the difference in point of interest. The receipt is to buy a pound of dates for 8d., to eat the fruit, or, if you do not like them yourself, to give them to your children, but to keep all the stones, which sow in heat, and you will be rewarded in a comparatively short time with fine young plants, capable of bearing a good deal of cold and draught and making a beautiful ornament for the drawing-room or the study. The first two or three leaves are simply broad grass-like fronds, but even these are graceful; the divided fronds, which come afterwards, are really most charming in their effect either separate or grouped with other Palms. This *Phoenix dactylifera* is the Palm of Holy Scripture, the one which once grew so abundantly round Jericho, the city of Palm trees; and it was, of course, tall fronds from this Palm which the people strewed in the path of our Saviour when He rode triumphantly into Jerusalem. On this account it has a special interest for most of us, who like to look at our plants not merely for their own beauty or for their own structural peculiarities, but also for the thoughts which may be attached to them in the mind of the grower. *Phoenixia* was so called from the quantity of this Palm which grew there formerly.

*Seaforthia elegans* is one of the most beautiful Palms where there is room for it. It requires space and generous treatment, and then few things can come up to the graceful beauty of a large plant of it with the older fronds bending down in a fine curve and the new fronds pushing straight up in the centre. This is the Palm now generally used on Palm Sunday, and tied

up in an ornamental fashion by the natives of Madeira and along the coast of the Mediterranean for that purpose. I should like to know how the fronds are made so beautifully white in their dried condition. They are frequently brought home and made use of as a room ornament hung upon the wall. I have tried the *Seaforthia* out of doors in summer, but it spoils the beauty of the plant, which is nothing once the green symmetry of the whole is injured.

I once had a case of Palms brought home for me from Australia. They travelled perfectly well in a glass case protected with boards. In it were two prickly Palms covered thickly with spines. They were labelled *Calamus australis*, but as there is no Palm known of that name I believe it was a mistake for *Calamus asperimus*. They have since made fine specimens. Two plants of *Corypha australis* grew rapidly after their arrival, and are now grand specimens, no longer capable of being carried into church for decorative purposes as of old. *Latania borbonica* is a more beautiful Palm of much the same external character. I see that by some the latter is called *Livistona sinensis*, and the former *Livistona australis*.

For table decoration it is necessary to have kinds which grow in a smaller way, and of these, so far as my experience goes, *Cocos Weddelliana* is *facile princeps*. It is a beautiful light feathery-looking Palm with graceful arching fronds, which are minutely divided. It is one of the slow-growing Palms, and therefore it is necessary to be patient with it. But even in its babyhood it is beautiful. It makes an excellent plant for the dinner table whether small or large. In the small state five or six of them in small silver stands look exceedingly well; in a larger state of course they must take a more central position. Their great recommendation is, that in common with the whole tribe they will bear so much knocking about. *Cocos Weddelliana* is, however, a Palm which likes a warm house.

*Areca monostachya*, or the Cabbage Palm, though not so beautiful as many, is a singular plant; the knotted stem is peculiar and gives it the character of a small tree. *Areca pectinata* is somewhat tender; its spiral mode of growth is pretty, and well grown it makes a fine specimen. I have found it too delicate to associate with *Corypha australis*, or even with the *Calamus*.

It is by no means necessary to have even a cool greenhouse to grow the hardier Palms. With a little care and attention they will be found to accommodate themselves to the sitting-room. Those who have rooms large enough cannot introduce any ornament more graceful than a fine specimen of *Latania borbonica* or *Corypha australis*; and those who have less space in their rooms may rejoice in the more upright growth of the beautiful genus *Phoenix*, which includes several good species. The genus *Chamærops* is another of the more hardy race. They will stand out of doors well in the west country. Many readers of this Journal are familiar with the magnificent Palm in the grounds of the Hon. and Rev. T. Boocawen at Lamorran, and at another place in Cornwall an avenue of Palms has been lately planted. A specimen of *Chamærops humilis* which I put out last year almost survived the very trying winter. Another specimen put out this year shall have its chance with the ensuing winter. It is wonderful how a Palm starts into growth as soon as it is taken out of its pot and put out with a depth of cool damp soil beneath it. I have no doubt with a little wrapping-up Palms could be easily kept alive through our Gloucestershire winters, but I always think it is a pity to spoil the look of a winter garden for the sake of preserving a specimen which would do much better indoors. A mat against the wall is not so conspicuous, nor does it spoil the general appearance of other things, but even that is bad enough. On the whole it is better to be satisfied with things which can really bear our climate, though attempts at acclimatisation are always interesting.—A GLOUCESTERSHIRE PARSON.

#### WHICH ARE THE BEST VEGETABLES TO GROW?

It is not at all times so easy to answer this query. What one gardener considers the best another will not grow. Two vegetables I have grown this year I unhesitatingly give the palm to—viz., Early Vienna Savoy and Sutton's Improved Dark Red Beet. Earliest Vienna Savoy I have grown this year for the first time. It was sown on April 2nd, together with Tom Thumb, Dwarf Green Curled, Early Ulm. Earliest Vienna had fine large solid heads fit to cut on August 25th; the other varieties are just now (October 1st) coming in, but none of

them will have such fine heads as the Vienna. Sutton's Dark Red Beet I have grown three years, and have tried it with the best of other varieties, and find none to equal it for ornament or use; for the future I shall grow no other, excepting the Egyptian for summer use, which is invaluable.—J. LANSDEN, *The Gardens, Barkby Hall, Leicester.*

#### ABOUT LIVERPOOL.—No. 4.

##### CALDERSTONE.

THIS, the seat of Charles MacIver, Esq., is situated four miles from Liverpool, and about one mile and a half from the river Mersey. Considering its nearness to such a large town the estate and the gardens are rather extensive. The drive leads through the park from the Allerton side for a good distance before reaching the mansion. The park, being moderate in size, has an even surface and is well wooded. Trees have grown remarkably well at Calderstone in days gone by, and they thrive even now much better than many would anticipate. Following the drive we pass under the shade of some fine old forest trees intermixed with large specimens of *Rhododendrons*, *Yews*, *Cedars*, *Hollies*, &c. The last named we refer to specially on account of their free growth. There are some magnificent specimens of the Silver-leaved variety, the common Holly, and the fine dark-leaved variety *Hodginsii*, which grows luxuriantly. The soil at Calderstone appears to be well adapted to the growth of *Hollies*. The principal features of interest at Calderstone are the old Oak, the glass houses, and the *Chrysanthemums*. To turn to the first of these, the old Oak stands on a good and well-kept lawn some distance from the house. The branches, which project a great distance from the main stem, are supported by iron stays. Should this gigantic old tree by accident fall to the ground the lawn at Calderstone would be deprived of its principal object of attraction. The shrubs, both flowering and ornamental, are more luxuriant and healthy than in the majority of places within the same radius of Liverpool. They are judiciously arranged in clumps on the lawn, and present nowhere that crowded appearance perceptible in many places, and the walks have where necessary gentle and easy curves.

Amongst the glass houses we will first notice the Pine stove. It is a fine span-roofed house of great length and width, with a walk down the centre and a narrow one close to the front on each side, for the purpose of conveniently attending to the Pines when they require watering. Good shelves are also arranged down the centre close to the glass for French Beans and Strawberries. The Pines are very good, and the appearance of the fruit speaks very highly for Mr. Dunnington's system of cultivation. The plants are both planted out and grown in pots; but the latter mode is preferred. The pips of the fruit in the majority of cases swell to a very large size in this house, much larger than we have generally seen them; and the plants are dwarf and stocky. The next house is similar to the last mentioned, and runs parallel with it, but is not quite so long; it is devoted to stove plants, the contents being clean and well grown. We noted several well-developed plants of different varieties of *Crotons* and *Dracenas*. The *Gardenias* were large and pyramidal-trained, and must from their size and appearance produce every year quantities of their sweet welcome flowers. *Bougainvillea glabra* is planted out at one end of the house, and runs to the other like a long Vine; it is pruned on the spur system and blooms profusely. *Allamanda Schottii* is also grown on the same principle, but on the opposite side. Specimens of *Dendrobium nobile* are numerous and extra fine, having pseudobulbs nearly 4 feet in length. Amongst the Orchids in this house we noticed *Dendrobium Wardianum*, *D. thyrsiflorum*, *D. Bensoniæ*, *D. primulinum*, *D. formosum giganteum*, *D. chrysotoxum*, a fine species generally known in gardens as *moniliforme*, and the lovely *D. Falconeri*, *Cypripedium Pariahii* with thirteen flowers open, *C. villosum*, *O. caudatum*, *C. niveum*, *C. hirsutissimum* and others; *Odontoglossum Alexandræ*, *O. Pescatorei*, and *O. triumphans*. These were grown in the stove and thrive wonderfully well. We also noticed several *Cattleyas*, *Oncidiums*, and *Phalaenopsis*. Two span-roofed houses are devoted to Melons, and their cultivation is well understood at Calderstone. The next house is devoted to Heaths, amongst which we noticed good plants of *Erica Marnockiana*, *E. Turnbullii*, *E. Victoria Regina*, *E. tricolor Barnesii*, *E. ampullacea*, *E. perspicua nana*, *E. Cavendishiana*, and *E. depressa multiflora*. *Epacris*, both large and small, were in very good condition. There is also a good-sized house devoted to Azaleas and Camellias. Before leaving



the plant houses it would be well to remark that *Kalceanthus* are well grown. We noticed in a plant pit some well-bloomed specimens, also some grand *Epiphyllums* with immense heads and in good condition. The conservatory is not large, but was at the time of our visit gay with seasonable flowering plants, and very conspicuous was *Campanula pyramidalis*, and a large *Camellia* in the centre. The roof is draped with a quantity of climbers, and the one most striking of all was *Abutilon megapotamicum variegatum*, which was flowering most profusely and hanging in festoons from the roof.

The houses were rather scattered, and we had to pass through the fruit garden before we reach the fruit houses. There are four houses devoted to the cultivation of Vines, one for early Grapes, one for Muscats, and the other two are late houses. The early one is planted with Black Hamburgs and Muscats, which were carrying a fine crop such as Grape-growers might be proud of showing. The two varieties can be grown together well with judicious management. The Grapes in all the houses were very good, and the Vines in fine condition. We noticed a good bunch or two on a young Vine of the variety Mrs. Pearson, and Mr. Dunnington speaks very favourably of it. Two houses are devoted to Peaches and Nectarines; all the fruit had been gathered previous to our visit. The trees mostly are of a good age, but never fail to produce heavy crops of fine fruit. These trees are well managed, thinly trained, and in every respect well attended to. The early house contains a good tree of Early Beatrice, which ripens fully a fortnight earlier than any other variety, and Mr. Dunnington speaks of discarding it because its fruit are undersized. The fruit garden above mentioned is a large-sized piece of ground and enclosed with high walls, which are furnished with well-trained trees, the south wall being covered with Peaches and Apricots. The crop of the former round Liverpool is very uncertain, and none of the fruit will ripen this year. Others are covered with Cherries, Plums and Pears, which are only half a crop and very small. Down the centre walk of the garden and running north and south is a large archway of ironwork, and entirely covered with Pears on the cordon system. The arrangement is neat and striking on the whole, but as far as the crop is concerned it is next to a failure. Quantities of fine well-trained pyramidal Pears and Apples stand by the side of the walks, and large squares are entirely devoted to Strawberries, Raspberries, Currants, and Gooseberries. On one side we observed a hedge of Gooseberries which were covered with fruit. At the end of one of the houses in this garden we noticed a collection of Anemones and Ranunculus although out of bloom. Mr. Dunnington informed us they had been magnificent, and are well worth seeing when in flower. They deserve to be much more extensively cultivated, and would, we are sure, afford pleasure and interest to the general lovers of beautiful flowers.

We will lastly notice that beautiful autumn and winter-flowering plant—viz., the *Chrysanthemum*, which has of late excited much attention not only round the neighbourhood of Liverpool but in other localities. We may at the outset say that Mr. Dunnington is the champion grower of the *Chrysanthemum* round the vicinity of Liverpool. No doubt the readers of the Journal, at least that portion of them that are growers of this fine flower, will be well able to form a good idea of the blooms Mr. Dunnington's plants produce when he holds such an elevated position in such a *Chrysanthemum*-growing district. We scarcely need go back to last year, but we believe his blooms were as near perfection as it was possible to grow them. So thoroughly acquainted is Mr. Dunnington with these plants that they are all known to him by the foliage, and he further knows to a day how long the blooms of the different varieties take to unfold and properly develop. The plants are never plunged, but are standing on boards in a sheltered corner where it is impossible for wind to affect them. Late propagating is also practised. We may add trained plants are not grown for exhibition, what few are grown are for home decoration.

The kitchen garden is situated a short distance away, and was clean and well cropped; in fact every department is well kept and cared for, which shows abundant proof of Mr. Dunnington's abilities as a good and clever gardener.—J. W.

#### NOTES ON POTATOES.

My estimation of some of the varieties may not be in keeping with other seasons, other growers, or other situations. It is given just as the quality and character of the Potatoes seem to suggest at the present time. In such extraordinary seasons as the two last have been, it becomes more and more necessary

to depend upon the earlier varieties. Early planting, early lifting and storing, is really the only way to save them. The six varieties that have produced the best results generally I have marked thus (\*) :—

*Potter's Victoria and Fluke Kidney*.—These are usually two of the most valuable and best; both produced only a very light crop, and nearly all have gone bad either before or after they were taken up.

*Schoolmaster*.—Sample very small and quality not at all satisfactory. Evidently does not like our cold soil.

*Porter's Excelsior*.—One of the best round Potatoes, not so white as one could wish. A very fine crop and almost free from disease.

*Red Emperor*.—White when cooked, and good flavoured, nearly round in shape, shallow eyes; good exhibition variety. Many diseased.

*Queen*.—We can see no queenly or special merit in this, and it is late in ripening.

*Red-skinned Flourball*.—Very rough sample and not good in quality.

*Fenn's Bountiful*.—Produces many small ones, but tolerably dry and good and not much diseased.

*Sultan*.—The merit in this is, that it will keep very late. Will certainly be discarded by us.

*Climax*.—Though not the heaviest crop the results are of the best—almost free from disease, very few small tubers, moderately dry and very good.

*Rector of Woodstock*.—This has produced too many small tubers, and is not a good colour. A few diseased.

*Myatt's Prolific*.—Well-known variety, light crop but good, and very few diseased.

*Early Alpha*.—The best early in the list, dwarf habit, handsome shape, white, good flavour, and very early. Very few diseased.

*Extra Early Vermont*.—Similar to Early Rose, makes less haulm, earlier, and this season much more diseased.

*Early Rose*.—Well known as an extraordinary heavy cropper, not so dry as usual; in other respects a very fine sample, and very few have taken the disease.

*King of the Earlies*.—Quite useless, at any rate to use. Might be used perhaps for frying, there being no danger of its breaking.

*Milky White*.—One of the best in quality, but a light crop and much diseased.

*Magnum Bonum*.—A very fine and handsome Potato; moderately dry, and only a few diseased.

*Brownell's Beauty*.—Cooks well, but is rough-looking with deep eyes, and many diseased.

*Brosce's Peerless*.—At present this does not cook well, close and watery. Is one of the handsomest, with very shallow eyes, but few diseased, and a fine sample; probably would be good on a dry soil.

*Late Rose*.—A very fine crop, cooks well, but will no doubt improve by keeping.

By way of testing the productiveness of some of the popular varieties of Potatoes I this season planted the undermentioned varieties on the same day. No extraordinary means were adopted to obtain large crops, the object merely being to ascertain the relative productiveness of the varieties under ordinary cultivation. Four pounds of each variety were planted, with the following results. *Myatt's Prolific* yielded 68 lbs., *Early Alpha* 86, *Extra Early Vermont* 98, *Early Rose* 92, *King of the Earlies* 54, *Milky White* 67, *Magnum Bonum* 60, *Brownell's Beauty* 56, *Brosce's Peerless* 52, *Schoolmaster* 73, *Porter's Excelsior* 92, *Fenn's Bountiful* 70, *Climax* 60, *Rector of Woodstock* 50, *Red-skinned Flourball* 64, *Sultan* 33, *Queen* 40, *Red Emperor* 48, *Potter's Victoria* 31, *Late Rose* 91, and *Fluke Kidney* 24.—C. MAXTED, *Kearney Abbey, Dover*.

#### NOTES AND GLEANINGS.

"THE sight of a sickly bed of TRANSPLANTED HEATHER," writes Mr. Luckhurst, "reminds us of a fact not generally known and which might be turned to account in the formation of beds of this ornamental plant. When soil is broken up near beds of Heather a spontaneous growth of its seedlings soon appears, which shows that its seed generally ripens. Sprays of it cut just as the flowers fade and stuck about the surface of a bed of peat would no doubt afford plenty of seedlings. In the red sandstone and ironstone districts a preparation of peat is unnecessary. We have now an abundant growth of seedlings upon the sides of a cutting throughout a

bed of gravel where the seed has evidently fallen among the gravel from some old plants growing along the top of the slopes."

A TRIO of DRACÆNAS FOR TABLE DECORATION of great merit, but which are not widely known, are Ernesti, Jucunda, and Sidneyi. They were raised by Mr. F. Bause at Mr. Wills's Melbourne Nursery, Anarley. D. Ernesti has leaves about 1½ inch in width and 9 inches in length, which arch gracefully, forming the segment of a circle: colour dark bronze margined with bright crimson. Very bright and elegant. D. Jucunda is of taller growth, the leaves being lanceolate, about 1 inch in width and 15 inches in length; dark margined with deep crimson. Hardy and good. D. Sidneyi is intermediate in habit between the two, and is very bright in colour, but rather more tender, yet very cheerful. These three slender-growing varieties are specially adapted for the purpose named, and will prove valuable for various decorative purposes.

"J.B.S.C." WRITES:—"One of the results of the singular summer and autumn of this year is the appearance of an exceptional number of late WILD FLOWERS. Many continue in bloom up to the present time that would in ordinary years have died down. In North Kent some of the fields and hedges are still gay with *Anagallis arvensis*, *Viola tricolor*, *Euphrasia officinalis*, *Genista pilosa*, and *Cichorium intybus*, amongst others of less note."

A CORRESPONDENT communicates the following on the PAMPAS GRASS and ARUNDO CONSPICUA:—"Fast as the Pampas Grass is now growing, it is too late in the season to admit of the possibility of a full development of those silvery plumes which usually enliven our gardens at this season of the year. October has arrived, and its lower temperature inducing a cessation of growth, and we must, therefore, for once forego the enjoyment of our favourite in its usual autumnal guise. Yet while we abstain from useless regrets, it should not be forgotten that although in *Aruno conspicua* we have not a substitute for *Gynurium*, it is certainly an ornamental Reed Grass of great beauty, which this year atones in some measure for the failure of its gigantic congener. Its slender elegant spikes usually appear early in August. This year they were a month later, and are still unfaded."

A BEAUTIFUL Fern, placed in commerce we believe by Messrs. Ireland & Thompson, Edinburgh, is *ADIANTUM FLEMINGII*. It has considerable resemblance to *A. coccineum*, but the plant is of more stately growth with longer and darker fronds. It makes a handsome medium-sized specimen, especially in the autumn when the fronds assume their dark hue; in the spring and early summer months its distinctive character is less apparent. It is of free growth, massive, and elegant.

WE have received from Mr. H. G. Smythe of Endell Street, Long Acre, a sample of a "new POT SCRUBBER, or pot-washing brush." It is of very simple construction, being entirely composed of coir (cocoa-nut) fibre; it is light but firm, of a convenient size, and excellently adapted for the purpose of cleaning pots. The price, too, is very moderate—6d. each, or 5s. per dozen.

IN the Temperate house at Kew the very beautiful and distinct *VACCINIUM RUGOSUM* is now flowering. The plant is shrubby in habit, and the leaves are narrow lance-shaped with serrate margins. The flowers are borne in small pendulous racemes, which spring from the axils of the leaves. The calyx is persistent, of a reddish tinge, and the corolla is urceolate (urn-shaped), faintly suffused with red, and of a semi-transparent texture, with five prominent longitudinal ridges; the limb is small with five reflexed pale yellow teeth. What renders the appearance of the flowers so distinct are the irregular wavy bands of dark red which surround the corolla. This really pretty plant was presented to the authorities at Kew a few years back by Messrs. Veitch of Chelsea. Another pretty species of the same genus is near the above—viz., *V. erythrinum*, a native of Java. It bears long racemes of dark red urn-shaped flowers."

THE luxuriance and abundance of FUONSIAS in the Isle of Wight is very striking to a stranger, and this is especially the case in the towns of Ryde and Ventnor, where nearly every garden has several handsome specimens, which during the summer months are loaded with their bright little flowers. Varieties of *F. magellanica* and *F. Riccartoni* are chiefly grown, and they form in some instances enormous specimens 6 feet high and the same in diameter.

IN the gardens on the southern coast of the Isle of

Wight HYDRANGEAS have this season been extremely fine. Some of the immense plants near Ventnor, which are quite 10 feet in diameter, have been masses of bloom for a considerable time. The predominating colour is a most lovely pale blue, a few shades of pink being visible in some of the heads. The soil in the neighbourhood is strongly impregnated with iron, and this may possibly have some influence on the colour.

AT Possingworth, near Uckfield, *PHORMIUM TENAX*, the New Zealand Flax, has for some years been established in a sheltered but somewhat damp position in the open garden. A huge plant of it some 6 feet in height is now in full bloom, and presents a very striking and ornamental appearance. The colour of the curious flowers is a rich brown-red, not lemon colour as is erroneously stated in a work on subtropical gardening, and the clustering spikes afford a pleasing contrast to the familiar broad green curved foliage. Mr. Reid informs us that this plant ripened its seed three years ago; which important fact shows that it may now be regarded as one of our best hardy plants in the southern counties.

WE have received the second part of "EUROPEAN FERNS," now being published by Messrs. Cassell, Petter, and Galpin. It contains a coloured plate showing the species of *Woodia*, with descriptive letterpress, and a continuation of the introduction.

## CHOICE GARDEN ORCHIDS.—No. 8.

### CATTLEYA.

(Continued from page 174.)

*Cattleya guttata*, Lindl. (Bot. Mag., t. 3693). Syn., *Cattleya sphenophora*, Moore; *C. elatior*, Hort.—A tall free-growing species, attaining a height of 1 to 2 feet, forming large masses in its native wilds, from whence we have received it in clumps of 1 to 3 feet in diameter. Pseudobulbs stem-like, terete, and much furrowed. Leaves mostly in pairs, oblong obtuse, concave, the base somewhat narrowed, coriaceous, and deep green. Scape erect, longer than the leaves, bearing five to ten large fleshy flowers. Sepals and petals nearly equal, linear oblong, acuminate. Petals slightly wavy; colour green, tinged with yellow, and dotted with red. Lip three-lobed; lateral lobes ovate, hooded; middle lobe somewhat cuneate, with tubercles on the disc, white and rosy purple. It blooms during the autumn months. Native of Brazil. 1827.

*C. guttata*, Lindl.; var. *Leopoldii*, Rehb. fl. (Pescatorea, t. 43). (Illust. Hort., t. 1471-2). Syn., *Cattleya Leopoldii*, Hort. Versch.—This variety resembles the species in habit; the pseudobulbs are, however, somewhat stouter. Scape erect, many-flowered, as many as thirty blooms being sometimes developed, although ten to twenty are more frequently seen. Sepals and petals chocolate, profusely spotted with deep red; lip of a uniform reddish purple throughout. It blooms during the summer months. Native of St. Catherine's, Brazil.

*C. granulosa*, Lindl. (Bot. Mag., t. 5048).—It has become somewhat fashionable of late years to decry this species and its varieties; they, however, amply repay any attention bestowed upon them. Sir Wm. Hooker in 1858, when giving the figure quoted above, says, "Even a quarto plate scarcely suffices to do justice to a well-grown specimen of this noble Cattleya." True, we have been made acquainted with many new and gorgeous species and varieties during the twenty years which have elapsed since that was written, but *C. granulosa* should not be turned out from any collections of these plants. Pseudobulbs stem-like, furrowed, 12 to 18 inches long, two-leaved. Leaves oblong-lanceolate, obtuse, coriaceous, and dark green. Scape terminal, erect, six to eight-flowered. Sepals oblong-lanceolate, slightly falcate, acute. Petals obovate, much broader than the sepals, waved at the margin, and coarsely toothed; the whole of a uniform olive green, irregularly spotted with crimson. Lip three-lobed; lateral lobes cucullate, enclosing the column, white without, pale yellow on the inside; middle lobe narrow at the base, where it is deep orange, ultimately expanding into a broad, sub-reniform limb, which is emarginate in front, finely denticulate at the edge, and furnished with a profusion of small fleshy tubercles (granulated); ground colour white, the granulations being deep rose. It blooms during August and September. Guatemala. 1840.

*C. amethystoglossa* (fig. 31), Rehb. fl. (Bot. Mag., t. 5683). (Warn. Select Orchid, v. i., t. 2). Syn., *Epidendrum amethystoglossum*, Rehb. fl.—A rare and beautiful species, with tall stem-like pseudobulbs some 2½ feet in height, in strong well-grown examples reaching even 3 feet, slender at the base, gradually

thickening upwards, and much furrowed, bearing at the top a pair of oblong-lanceolate, obtuse, coriaceous, dark green leaves, about 6 inches in length, and upwards of 2 inches in breadth. Scape stout, erect, sheathing at the base, and many-flowered. Flowers large, upwards of 4 inches in diameter. Sepals and petals oblong-ovate, obtuse, nearly equal, white, profusely spotted and blotched with rosy purple. In some examples we have found these blotches often become confluent, thus forming transverse bars. Lip three-lobed; middle lobe spreading, broader than long, narrow at the base, the apex marked with radiating ridges, which are papillose;

colour a deep rich amethyst; side lobes erect, cucullate, and spreading outwards at the points, where they are the same rich colour as the middle lobe, outside white. It blooms during May and June, lasting several weeks in full beauty. Native of Brazil. 1862.

*C. amethystoglossa*, Rchb. fil.; var. *sulphurea*, Rchb. fil. (Gard. Chron., 1866, p. 315).—This is a remarkable and showy variety. Professor Reichenbach, in describing it, says, "The flowers are nearly or quite of as pure a lemon colour as those of *Cattleya citrina*, and the lip is cream-coloured." It blooms during May and June.



Fig. 31.—*CATILEYA AMETHYSTOGLOSSA*.

*C. velutina*, Rchb. fil.—A species of great beauty, but of which we have at present seen no figure. "Pseudobulbs nearly terete, furrowed, 12 to 18 inches or more high. Leaves in pairs, oblong-acute, some 8 inches long, and upwards of 1½ inch in breadth. Scape terminal, erect, many-flowered. Flowers large, and very fragrant. Sepals ligulate-acute, recurved. Petals much broader than the sepals, oblong-acute, all of a beautiful orange green, irregularly blotched, spotted, and streaked with purple. Lip three-lobed; lateral lobes small, somewhat ovate, cucullate, soft rose, with purple lines; middle lobe large, ovate-acute, deep velvety rose, veined and streaked with purple; throat yellow." It blooms during the autumn months. Native of Brazil. 1869.

*C. Loddigesii*, Lindl. (Bot. Cat., 337).—This is a fine old species, well deserving a place in every collection, if only to keep fresh in the memory the ardent lover and cultivator of plants whose name it bears; independent of this, however, it is a most desirable plant on account of its free-flowering habit and soft delicate colour. Pseudobulbs stem-like, jointed at intervals, furrowed, about a foot high, bearing a pair of leaves on the summit. Leaves ovate-lanceolate, obtuse, coriaceous, about 6 inches long, deep green. Scape terminal, erect, three to five-flowered. Sepals and petals about equal, oblong-obtuse, slightly waved at the margins, pale rose tinged with lilac, and spotted all over with dark spots. Lip three-lobed; lateral lobes convolute; middle lobe spreading,

beautifully crispate in front, light rose, marked with yellow and purple at the base. It blooms during autumn. Brazil. 1818.

#### TRICYRTIS HIRTA.

THIS attractive herbaceous plant, although well known in most large collections, is by no means in general cultivation, and is in fact quite new to many persons. The annexed

engraving represents very fairly the clusters of flowers, which rise from the axils of the leaves on the upper part of the stems. The latter usually reach a height of 3 to 4 feet, and bear numerous sessile, clasping, hairy, alternate leaves. The flowers are white, thickly dotted with purple, the divisions of the perianth being slightly recurved. The plant is hardy, and will thrive extremely well in a sheltered border composed of sandy loam and peat; but as the flowers appear late in the



Fig. 32.—TRICYRTIS HIRTA.

season, the leaves are often by that time shrivelled and present a very unsatisfactory appearance. For this reason the plant seems to be best suited for pot culture, and it is well adapted for growing in a greenhouse or any structure of a similar temperature. The flowers also are seen to much greater advantage when near to the eye than if the plant occupies a border, where the fine markings of the sepals are quite lost. It can scarcely be imagined what pretty little button holes the flowers make when mounted, and they are also well suited for bouquets, &c. During the time the plant is growing freely and until the flowers are produced abundant supplies of water will be required, but after the flowers have faded water must be given in smaller quantities, only sufficient to keep the soil slightly moist. The pots must be thoroughly drained, and the

soil employed should consist of loam, sand, peat, and a small proportion of leaf soil may be added.

This species of *Tricyrtis* was originally named by Thunberg *Uvularia hirta*, but since Mr. Fortune rediscovered the plant in Japan, and sent specimens to Mr. Standish of Bagshot, the old generic name has been discarded in favour of the one given above. The name *Tricyrtis* we may remark is derived from two Greek words, and refers to the three sac-like convexities at the base of the outer divisions of the perianth.—L. CASTLE.

**PROTECTING WALL FRUIT FROM INSECTS.**—I am very much troubled (and I believe all my gardening friends are in the same predicament) with insects eating my ripe wall fruit, especially



Peaches and Nectarines. Last year at the end of the season I tried making small bags of green lino or mosquito gauze and putting them on the fruit, tying the bags with small twine as close to the stalk of the fruit as possible. It succeeded perfectly, and this year I have tried it on a larger scale, and have every reason to be satisfied with the result. No fruit thus covered has been attacked in any way. The bags are 8 inches by 5, and they will do from year to year.—HORACE.

#### LILIUM AURATUM AT ANTWERP.

I SEND herewith photographs of a *Lilium auratum* growing in an Azalea bed on the north-east side of a small Oak wood. The bulb was planted three or four years ago and this year has emitted two flower stalks, one of which exhibiting a quite abnormal growth. The stalk is flat and broad ( $2\frac{1}{4}$  inches); in fact it is a stalk composed of five or six brother stalks grown one into the other under one envelope of bark. It forms one enormous head of flowers crowded closely together to the number of 157, and forming a dense mass over 2 feet in diameter. The height of the whole plant is 6 feet. This abnormal growth may interest you and the readers of your Journal. Another *Lilium auratum*, standing on the east side of a slope in another part of my garden and well protected by Fir trees, had omitted also two big flower stalks enormously high—9 feet. The flowering was much earlier and was magnificent, although each head had no more than twenty-eight or thirty flowers. Small plants are now springing up near the large specimens, which is a sign with me of the old bulbs dying off and being replaced by new bulbs much more numerous. In fact my bulbs generally do not last more than four years in the open borders, when they disappear, but are happily replaced by young ones.—J. EVERAERTS, *Antwerp*.

[We have frequently seen fasciated examples of *Lilium auratum* bearing many flowers, but never saw a spike more imposing than the one represented in the photographs submitted.—EDS.]

#### DAHLIAS AT SWANLEY.

AMONGST the numerous plants that Mr. Cannell so well cultivates, the Dahlia receives a large and increasing share of his attention, with corresponding satisfactory results. Having grown an immense number of varieties he has by carefully selecting the best and most distinct acquired a stock which includes some of the best in cultivation. On the occasion of a recent visit I found these plants in excellent condition as regards their flowers, although the growth is not quite so free as in more favourable seasons. Separate quarters are assigned to the different races known as pompons, show, fancy, and bedding varieties, and the original single, but yet pretty, forms are also well represented. Among the latter that beautiful form named Paragon is especially noticeable, although Mr. Cannell has not had it in such good condition this season as when he first exhibited it at one of the meetings of the Royal Horticultural Society in 1878. Readers of this Journal are no doubt familiar with it from the excellent engraving that appeared very shortly after (vol. xxxv., page 248). It bears some resemblance in form and colour to *D. superflua*, of which it probably is a variety, but nothing is definitely known concerning its origin. The outer florets are flat, rounded and broad, of a dark rich crimson colour, margined with a narrow band of a lighter shade, the central florets being small, densely crowded, and yellow. Another very attractive form, which I know not whether to call a variety or species, is that which was recently exhibited by Mr. Cannell at Kensington under the name of the Cactus Dahlia. The flowers are large, and the florets, instead of being quilled or cupped as in the ordinary form, are all flattened out like the outer florets in most of the single varieties. The colour is a most intense rich crimson. Mr. Cannell obtained the plant from Mr. Cullingford of Phillimore Gardens (under the name of *D. Yuarezii*), to whom it was sent by the continental nurserymen, Messrs. Ant. Roozen and Son, and that is all I have been able to learn in reference to it. In addition to the above, several others were showy and free-flowering; notably *Cervantesii* with orange-scarlet outer florets; lutea, bright yellow; *gracilis perfecta*, crimson; and *glabrata*, lilac.

The show varieties are very numerous and fine, but I can only give a few brief notes of those that appeared the best at the time of my visit. *Toison d'Or*, one of Turner's raising, has a neat globular flower, in colour bright yellow; Samuel

Plimsoil, an excellent flower, rich purple lake; Star of the Morning, sent out by Keynes, flowers very large, of a bright orange tint; Sarah McMullen, raised by Rawlings, a good colour, purplish pink; King of Primroses, clear primrose tint; John Sladden, flower of medium size, colour dark maroon; Lady Blanche, pure white; Dr. Moffat, very dark purple. Next I noted a few of the curiously streaked varieties known as fancies. Of these the most distinct were the following:—Robert Burns, flower large, light purple, with streaks of a darker shade; Viceroy, suffused with pink, crimson streaks and spots; Regularity, somewhat similar to the last, but large and the streaks are of a more purplish tinge; Harlequin, very striking, yellow, thickly streaked with crimson; Fanny Sturt, handsome flower, bright crimson, tipped with white; Mrs. Saunders, large flower, pale yellow, tipped with white.

The bouquet or pompon Dahlias are rapidly and deservedly becoming more popular, for there is a neatness in the diminutive flowers that is far more pleasing to many persons than the huge blooms grown for exhibition. Sambo is a fine dark maroon; Little Beauty a good white; Rigollette, bright dark crimson; Barcelona, very neat, bright crimson; Lydia, bright yellow; and Little Helena, a purplish tinge. Of the bedding varieties the best for general purposes are Vivid, scarlet; Crimson King; Dauntless, orange; Nelly, white tipped with purple; Ethel Newcombe, clear pale yellow; John Laing, scarlet-crimson; and High Sheriff, of the darkest maroon colour.

There were many other plants worthy of notice, especially the Marigolds, *Antirrhinums*, *Asters*, and *Hollyhocks*, of which Mr. Cannell possesses excellent strains; but for the present I must confine myself to the Dahlias, which amply repaid me for my visit.—R., *Swaley*.

#### PLANTS IN FLOWER AT BIRDHILL HOUSE, CLONMEL.

THE visitor is always and at all seasons sure to find many things to interest him here—many floral beauties to admire, while Mr. Gough or his gardener are always ready to explain details of cultivation. Of the many lovely plants now flowering I noted the following indoors—

*Lilium lancifolium*.—Of this there is a wonderful display. Half a dozen plants in 10-inch pots fill the entire end of the conservatory, each bearing from thirty to sixty fully developed flowers of the richest tints of colour, softly shaded into each other. The plants were plunged in coal ashes during the summer if we had a summer—behind a north wall, and protected from gusty winds. There they were left until showing bloom. The outdoor Japanese Lilies were also very fine, and even still more floriferous in many localities. There are still fine specimens blooming here of *L. auratum*.

*Valloia purpurea*.—A few early bulbs of these are conspicuous by their fine bright crimson blooms, while later bulbs will flower for months to come with cooler treatment. I saw them flowering freely in cottage windows last year in Sussex.

*Coleus*.—Mr. Gough's collection is large and very select, containing many of the rare new introductions. Notwithstanding the absence of sunshine this year the colours came out very brilliantly, especially *Pictus*, Multicolor, *Duchess*, *Shah*, *Lady Burrill*, *Rubra*, *Brilliant*, &c. When once established they grow and make fine stocky plants with frame or greenhouse culture.

*Gloxinia crassifolia*.—This is a fine plant, the richness and soft colouring of which baffles description. Of three dozen seedlings of the present year obtained from one package of Messrs. Suttons' seed many are now throwing up fine blooms of the most gorgeous tints. The temperature of the stove is kept pretty steady at 70°, with that moist atmosphere in which they luxuriate. This year I have found it useless to try to bring them to perfection except under somewhat similar treatment.

*Gesnera Cooperi*.—The profuseness of bloom of two of these magnificent stove plants with their fine brilliant scarlet tubular flowers exceeded anything I had hitherto noticed of the same kind. I am certain each contained 250 fully expanded flowers, the brilliancy of which festooned around quite eclipsed *Vincas*, *Fittonias*, *Dendrobiums*, and even a fine *Eucharis amasonica* within their vicinity.

*Tuberous Begonias*.—These are a speciality at Birdhill, and the bloom at present inside and out notwithstanding the peculiarity of the season, is said by experts to be one of the finest in Ireland. Mr. Loneygan, Mr. Gough's intelligent gardener, has succeeded in raising many novelties as seedlings, a semi-double



not named of a very rich hue being very noticeable. Notwithstanding the prolonged wet weather these hedged out continue to flower profusely, and with their wanted grace and brilliancy. As to their accommodating nature referred to in a previous number by me, I may mention they have been satisfactorily used here as basket plants with fine effect. Of Orchids deserving more than a passing notice—

*Odontoglossum grande*.—A small plant with three stems and five flowers on each appeared very handsome, and seemed to deserve the fancy name of the "Tiger Flower" from the analogous stripes on the back. It was grown in a 6-inch pot, and has been blooming for the past five weeks.

*Vanda saccata*.—Two large flower stems with eight flowers on each, of a fine creamy white crimson. The blooms last very long, and it seems deserving of the preference it generally receives as an exhibition plant.

*Oncidium papilio* (The "Butterfly Orchid.")—This is no misnomer, for if perched on a flower the resemblance would be life-like. They are sometimes grown in pots. Mr. Loneyan prefers blocks for it. The flowers last very long.

*Odontoglossum Uroslimmeri*.—This may almost be said to exceed the best in continuous blooming habit. Some three months since I observed the same specimens flowering finely that I note to-day. Extreme cleanliness was most conspicuous everywhere, walks, stages, glass, but particularly the plants. In fact even a green fly was not to be observed. The success was proportionate.—W. J. M., *Clonmel*.

#### DESFONTAINIA SPINOSA.

I FIND this plant perfectly hardy here on the west coast of Angilyshire. I turned out a small pot plant six years ago. It is now upwards of 5 feet high and 12 feet in circumference, and has stood without any protection; and even during last winter's severe frosts, lasting almost consecutively for three months, did not lose a twig. It continues to grow freely and to produce a succession of flowers on the young wood as late as November. It seems to like a damp climate and cool moist soil. I would suggest growing it in England in a hardy fernery in the lightest and best ventilated part of the house, where it would probably flower till Christmas. It is very easily propagated either by layers or cuttings.—A. DUNLOP ANDERSON, *Ardshiel, Appin, N.B.*

#### ROSA POLYANTHA, ITS IMPORTANCE AS A STOCK.

NOW that Briars are becoming more and more scarce, and their prices rise accordingly, I deem it necessary to call the attention of horticulturists to a new Briar of very vigorous growth and easy to raise, which characteristics entitle it to be further known and brought into use.

It is of recent introduction, and indigenous to Japan; its flowers, which bear a certain resemblance to the common Briar, are nevertheless smaller and paler; they are single, sweet-scented, and grow in clusters of between thirty and forty, succeeded by obovate fruits about the size of the kernel of a cherry. M. Carrière, who gave a description of *Rosa polyantha*, Sieb. and Zucc., in the "Revue Horticole" of 1st July, 1876, states that this Rose forms sterile branches about 6 feet high. He also cites the result of some seedlings, some of which had rose-coloured flowers, others yellow, and in some cases they were double; others again had white, or rose and white, or yellow flowers. The Botanic Garden at Bordeaux received some seed from Japan in 1873, which directly upon their arrival were sown in light soil. Ten young plants of vigorous growth were the result. The second year their vigorous growth was even more apparent. Since that time repeated trials have proved conclusively that this Rose can with advantage be substituted for the common Briar as a stock.

Suppose you have a clump of *Rosa polyantha*. In November, after first cutting off all the shoots, which should be carefully laid aside, pull the clump to pieces, preserving if possible a heel to each bit, and if provided with a few rootlets so much the better; the strongest pieces are then planted out far enough apart to allow of their being trained as standards and budded the following summer. The smaller and misshaped pieces are next cut into needful lengths and planted as stocks for half-standards and dwarfs. Lastly, the branches and bits of wood, even to the smallest twigs, are made into cuttings, which root as easily as couch grass. These cuttings will the following season, and the year after that, make vigorous plants

to form new plantations. The strongest roots found on dividing the plants can be potted, grafted, and placed on a hotbed, where they will speedily "take" and push vigorously. These grafts generally succeed in the proportion of 80 per cent.

The common Briar (*Rosa canina*, L.) roots but sparingly from cuttings, and takes a long time to raise from seed. I would therefore advise all interested in the cultivation of Roses to plant the *Rosa polyantha*, considering that a cutting of moderate size will attain ample size to be budded the same season as a dwarf, or the year following as a standard or half-standard.

A German cultivator recommends Elisabeth Vigner as an excellent Rose for forcing purposes, especially as standards on the Briar in pots.—A. CAILLE, *Botanic Garden at Bordeaux*.—(*Journal des Roses*.)

#### DAVALLIA PARVULA.

THIS charming little plant is a native of Borneo, and is deserving of a place in every fernery, although at present it is not so frequently met with as might be expected. The rhizome is slender and creeping, as in the other species, but the fronds are very diminutive, finely divided, and dark green, while the height of the entire plant rarely exceeds 3 or 4 inches. It may be grown in a Wardian case or under a large bellglass, and requires a small portion of the stem of a Tree Fern to cling to; over this the rhizomes will run freely, producing the delicate and pretty little fronds. Any approach to stagnation in the soil or on the fronds must be carefully avoided or they will speedily damp off, but at the same time a deficiency of moisture is equally fatal. For this reason a Wardian case is especially adapted to its requirements, as the suitable degree of moisture can easily be maintained. The pan must be well drained with clean potsherds, the largest at the bottom and a layer of smaller pieces over them. The soil should consist of fine fibrous peat with a good proportion of silver sand. If the Fern stem intended to support the plant is placed in an erect position the water may be applied at the top and allowed to trickle down the sides; sprinkling water over the fronds too freely is not advisable. A temperature of 60° to 76° is necessary to obtain it in good condition.—F. L. L.

#### MANURE FOR ROSES.

OF the many difficulties which present themselves in connection with Rose-growing to anyone situated, like myself, in the neighbourhood of a large town, perhaps not the least is that of procuring suitable manure at a reasonable price. I think all are agreed that nothing can beat good farmyard manure, cow or pig dung being the best. But I find it next to impossible to procure it, most farmers being compelled under a penalty not to sell but to use it upon their land. The Manchester Corporation have helped us to solve the difficulty by placing upon the market a concentrated manure, which, after a fair trial (and as I have no interest in the sale I may be supposed to give my impartial judgment), as a substitute for farmyard manure I know of no equal.

The manure is in a granulated form, specially made thus at the request of a large number of influential farmers. It is made from urine and solid excrement, mixed with blood, bones, fish, and dried animal matter. In disposing of this manure the Corporation of Manchester have a double object in view. In the first place, by disposing of their products in this form they are enabled to utilise human feces, putrid fish, and animal matter, the blood and refuse from slaughter houses, and dead animals, which are so difficult in all towns to dispose of; at the same time they are preparing a valuable manure suitable for all crops, which is conveyed to the farmer at a cheap rate, and applied to the land with ease and economy. I should add that it is packed in bags (which are not charged for) and delivered at any railway or canal station in Great Britain. This, I think, would be an excellent manure for "WYLD SAVAGE."—M. CHESTER.

#### THE CUCKOO.

THE following particulars respecting the habits of the Cuckoo may be interesting to some of your readers. About the end of June, 1877, one of our gardeners found a young Cuckoo in a pied Wagtail's nest that was built in a Pear tree that is trained against the garden wall. The eggs of the Wagtails had been sucked and thrown out. The bird grew very fast, and the

parent Cuckoos came on to the top of the wall nearly every day to see the young one, and when ready to fly it perched in some trees close by and the old Cuckoos with it, the Wagtail still feeding it, until at last they all disappeared.

This year the pair of Cuckoos were again about the garden, but we found no nest, though we could see the Wagtails were very busy; but about August 15th we saw a fine young Cuckoo sitting on the hurdles close to the house and the Wagtail at work feeding it. It remained several hours, the little bird feeding it with insects every few minutes. It was most curious to see the great red mouth open enough each time to swallow the Wagtail bodily. All the birds are very tame, as they are never disturbed, and the cock Cuckoo will sit only a few yards from me, singing all the while.—HARRIET E. FRANK, *Ashbourne Hall, Derbyshire*.

## WORK FOR THE WEEK.

### FRUIT HOUSES.

**Vines.**—Fermenting materials should now be prepared for placing on outside borders at least a fortnight previous to closing the houses in which it is intended to have ripe Grapes in March or early April. Two parts of Oak or Beech leaves with a third of fresh stable litter thrown into a heap, moistened if necessary, and turned over a few times, will afford a more durable heat than dung. Fermenting material should also be prepared for placing inside the house, which will aid the Vines in starting and lessen the necessity for fire heat. If the earliest Vines have been pruned the house should be thoroughly cleansed, the border being top-dressed as before advised, and the house kept as cool as possible. Vines intended to be started early in December should be pruned (if not already done) without further delay, so as to allow them some weeks of rest before starting. The earliest Vines in pots start more freely if a slight bottom heat can be afforded them; a bed of leaves with the addition of a third part of stable litter will maintain a mild lasting heat. The temperature at starting the Vines should not exceed 55° by artificial means, but when the buds show signs of breaking it may gradually be increased to 65°. The canes should be slung in a horizontal position to induce them to push their buds evenly throughout the length of the rods, syringing them three or more times a day. Vines that have been ripened early, pruned, and had about six weeks' rest may be started at once. The present is a good time to lay in a stock of materials for forming Vine borders. The top three inches of a pasture where the soil is of a rather light loam (and if it overlies gravel all the better) is suitable for Vines, and should form the staple of the compost. Late houses in which the Vines were judiciously forwarded by fire heat in the spring will probably now have crops of ripe well-coloured Grapes, which will keep much better than those that still require heat. Liberal ventilation on all favourable occasions will be required, and as the foliage is matured the temperature may be allowed to fall to a minimum of 60°. Mats or a light covering of clean dry straw placed on the inside borders will prevent the rising of moisture. The Grapes should be looked over twice a week for the removal of decayed berries, but if thoroughly ripened they will give little trouble. A supply of fern where the common bracken is plentiful should be cut for covering up late house borders for the winter. A good covering of bracken is quite equal if not superior to litter as a protection. Young Vines not unfrequently are disposed to break into another growth, which must be checked by moderate stopping, facilitating the ripening of the wood by keeping a high and dry temperature through the day, shutting off the heat and opening the ventilators at night. Late Grapes not yet ripe must have fire heat briskly by day with a free circulation of air, and the temperature must not be allowed to fall below 65° at night, and to assist the ripening of the wood keep lateral growths closely stopped.

**Peaches and Nectarines.**—In the earliest house the trees will be at rest, and they should be pruned and tied to the trellis after being dressed with an insecticide, the whole house having a thorough cleansing. The inside border must not lack moisture. The trees in midseason houses should be attended to before the leaves fall, and if the trees be too vigorous root-pruning or lifting the trees should be resorted to. Efficient drainage must be provided, and any strong roots should be shortened back, employing the soil rather dry so as to admit of being rammed firmly. Turfy loam rather strong, with the addition of a tenth of chalk or lime rubbish and a twentieth of charred refuse well incorporated, forms a suitable material for renovating old or making new borders. No manure should be added, it is best given as a mulch and in a liquid form. New borders should be drained to a depth of 9 to 12 inches, and 2 feet depth of soil is ample. The earlier the trees are planted after the leaves show indications of falling the better, as fresh rootlets are produced at once. Except for affording fruit very early—when a tree or two of Early Beatrice or Early Louise may be planted—the very early Peaches are not comparable to Hale's Early. Early Grosse Mignonne, A. Bec, and Dr. Hogg are the best of the early kinds; Grosse Mignonne, Royal George,

Violette Hâtive, and Noblesse are fine old Peaches that force well; Bellegarde, Barrington, Stirling Castle, and Late Admirable make a dozen of the best varieties. Lord Napier is the best of the early Nectarines; Elruge, Violette Hâtive, Pine Apple, Stanwick, Elruge, and Albert Victor are all that is necessary in Nectarines. They, with the Peaches, are named in order of ripening, and as suitable for early, midseason, and late forcing.

**Cherry House.**—If it is intended to plant any trees it should be seen to as soon as the leaves begin to fall. The Cherry—indeed, stone fruits generally—thrive best in a calcareous soil. Turfy loam with a tenth of old mortar rubbish, or a sixth of road scrapings, thoroughly incorporated answers very well, the border being about 80 inches deep and thoroughly drained to a depth of 9 inches, and about 6 feet wide, which is ample for trees grown under glass. Black Tartarian and May Duke are the best varieties, but the yellow forms an excellent addition to the dessert when fresh fruit is not over-plentiful; Early Jaboulay, Elton, and Governor Wood are first-rate. The lights having been removed they need not be replaced for a month or six weeks, the old surface soil being removed without injury to the roots and replaced with fresh compost, that above named answering with the addition of a fourth of manure. Trees in pots required to be shifted into a larger size should be attended to at once; and those not requiring to be so treated should be turned out of the pots, removing a few inches of soil from the base of the balls, cutting back the roots, and replace the soil removed with fresh loam, adding about a tenth of old mortar rubbish and a sprinkling of half-inch bones, good drainage being provided. Remove the surface soil, replacing with the above compost, adding a fourth of well-decomposed manure. Afford a good watering, and place the trees where they can have plenty of air.

**Orchard House.**—Trees that require repotting should be shifted into pots about 2 inches larger before the leaves have fallen, disentangling the roots at the sides of the ball as well as those at the base, and removing the surface soil, any long roots being cut back and the fresh soil rammed as firmly as possible. If it is not desired to place the trees in large pots the sides of the balls may be reduced about an inch, the roots cut back, and returned to pots of the same size. It is important that good drainage be provided. Trees that it may only be desirable to top-dress should have the surface soil removed to a depth of 3 or 4 inches, replacing with fresh material. Turfy, yellow, or rather strong loam with about a fourth of well-decomposed manure answer well if thoroughly incorporated with the loam; and if there be an addition of charred refuse, about a tenth, and crushed bones, a twentieth, it will be an advantage. A good watering should be given. Any trees from which the fruit has not been gathered must not be yet disturbed at the roots. Pears, Plums, and Apples mature the buds better when placed outside in a sheltered situation than they do under glass, but it is a mistake to place them outside under the impression that the wood is thereby ripened, whereas heat and a dry atmosphere are required to effect that, and is best accomplished under glass. Trees, however, may be placed outside when the wood is ripe with advantage, but the pots must be placed on a hard bottom. Peaches and Nectarines should have all the light and air possible.

### FLOWER GARDEN.

Some of the subtropical plants—such as *Aralias*, *Acacia lophantha*, *Abutilons*, *Cannas*, *Melanthus*, *Dracaenas*, *Mosses*, *Wignandias*, &c.—lifted carefully with good balls, potted and placed in a close moist house, and frequently syringed, soon become established, and are very useful for furnishing conservatories, corridors, halls, &c., being much more suitable for such purposes than choicer and more delicate plants. All tender plants which it is desirable to save should be removed from the beds before they become affected by frost. *Pelargoniums* grown for their foliage should only have some of the leaves removed, but those grown for their flowers may be cut-in rather closely and the roots trimmed, so as to allow of the plants being potted in small pots. Very little water will be needed for some time, but it is necessary that the plants have light airy structures and a temperature of 40° to 45° by artificial means. As soon as the beds have been cleared attention should be at once turned to refilling them, either with dwarf shrubs, spring-flowering plants, or bulbs. Snowdrops, Crocuses, and Squills should be employed for edging the beds or borders, and in employing the Crocuses it is desirable to keep the colours separate. The Squills also should be kept separate, employing the early-flowering, as *Scilla sibirica*, *bifolia*, and *amena*, which prefer a sandy soil. Select those varieties of bulbs that are the brightest and most distinct in colour, such as in *Hyacinths* Robert Steiger, red; Amy, crimson; Madame Hodson, pink; Grand Vainqueur, white; Blanchard, white; Grandeur à Merveille, bluish; Grand Lilas, pale blue; Mimosa, dark purple; Blen Mourant; and Meyerbeer, yellow. In *Tulips* Bacchus, crimson; Crimson King; Pottebakker, reddish violet; Thos. Moore, orange; Rose Gris de Lin, rose and white; Proserpine, dark rose; Kaiser Kroon, scarlet, margined yellow; Cramoisie Royale, rose; Comte de Mirabeau, white; Standard Royal, white, feathered rosy crimson; Rosa Mundi, white, shaded rose; Queen of the Violets; and Yellow Prince. There is, indeed, no need of empty beds in winter

and scanty bloom in spring, as Winter Aconite and Snowdrops are rapidly succeeded by Primroses, Squills, Aubrietias, Myosotis or Forget-me-nots, Daisies, Pansies, Arabis, Gentians, Hepaticas, Alyssums, Wallflowers, Anemones, and perennial Candytufts (Iberis). To add to the beauty of the beds in winter the decorative value of shrubs is but little turned to account, and such plants as Erica herbacea carnea, Euonymus radicans variegatus, Golden Thyme, and Vinca elegantissima serve as edgings to taller plants, such as Hollies and Tree Ivies, Osmanthus, Cupressus, dwarf Rhododendrons, Japan Euonymus, Skimmia japonica, Thuja aurea, Retinosporas, Boxes, Aucubas, Andromeda floribunda, Cryptomeria elegans, and many others that separately or in combination with flowering plants produce a cheery effect from the time of the removal of the summer occupants.

#### PLANT HOUSES.

**Stove.**—Allamandas intended for early flowering, and which will consequently require to be cut back about the new year, should now receive no more water than will just keep them from flagging, so as to check growth sufficiently to insure well-ripened wood. Any plant of Clerodendron Balfourianum, Bougainvillea glabra, &c., required to have the growth ripened-up should have plenty of light and a moderately dry atmosphere, which is more satisfactory than subjecting them to a low temperature. Roof climbers should be well thinned out or cut back so as to allow plenty of light to reach the plants beneath. Some Passion-Flowers are very fine at this season, notably Passiflora kermesina, P. cardinalis, P. Munroi, P. princeps. Bougainvillea glabra as a roof climber affords a grand display late in winter, and Ipomoea Horsfalliae is showing its rich flowers, so that these and others as Manettias, Jasminum Sambac that flowers during the autumn or winter, must not be cut back or be reduced too much. This is the best time in the year to destroy mealy bug and white and brown scale. A wineglassful each of methylated spirits and turpentine to a gallon of water is a very good mixture, but we are now using nicotine soap with good effect at a strength of 6 ozs. to 8 ozs. to a gallon of water at a temperature of 100°. It removes white scale, mealy bug, and brown scale, leaving the plants clean. It has no unpleasant smell, is pleasant to use, and efficacious, whilst not injuring the foliage. Stove-flowering Begonias should have every attention to insure their flowering strongly, affording liquid manure occasionally. They will produce a quantity of bloom through the winter that will be very acceptable for cutting. Medinilla magnifica to insure its free flowering should be kept at the driest end of the stove, and have no more water than will keep the leaves from suffering. Stephanotis floribunda should not be pruned at this season, but kept with its shoots near to the glass. Bouvardias to flower freely in winter must be placed near the glass in a stove or an intermediate house with a temperature of 55° to 65° by artificial means, supplying liquid manure about once a week. Richardia æthiopica should be placed in a house near the glass with a temperature of 55° at night, and be well supplied with water and liquid manure occasionally. A few roots of Lily of the Valley should be started. Plants that were employed for gentle forcing in spring and kept growing under glass until the growths were complete, and having been hardened-off outdoors, will be in fine condition, flowering freely if plunged in bottom heat of about 90°.

**Orchids.**—Some decline must now be made in the temperature—a mean of 70° by day and 60° at night for the East India house; Cattleya house, 65° by day and 55° by night; and for the Odontoglossum house 55° by day and 45° at night is desirable. Very little ventilation will be necessary except on mild days. The atmospheric moisture must also be reduced, and syringing overhead discontinued. Calanthes are producing their flower spikes, and should be kept near the glass and have encouragement in the shape of heat and moisture, and have the leaves kept clean by sponging. Zygopetalums and other plants starting into growth must be kept moderately moistened, placing them in the most favourable part of the house, where they can have plenty of light and moisture, repotting if necessary, or renew the surface with fresh material. Dendrobiums, Cattleyas, and other plants, the growth of which is complete, will require very little water. Phalenopsis must be very carefully watered, as the leaves are liable to decay. Keep the glass and woodwork as clean as possible, giving the plants a thorough cleansing, neatly staking young growths. Slugs are very destructive to the tender growths and flowers, and should be sought after by lamplight. Plants in flower should have a drier atmosphere, as they last much longer in a somewhat dry atmosphere than in a moist one, and 50° to 55° most will bear without injury when in flower. Odontoglossum grande, Pleioneas, and Vanda cœrulea are fine at this time of year, also Oncidium macranthum, O. flexuosum majus, O. aurosum, O. incurvum, O. tigrinum, and O. ornithorhynchum.

#### TRADE CATALOGUES RECEIVED.

W. Bull, Chelsea.—*Illustrated Catalogue of New and Rare Plants.*  
William Rumsey, Waltham Cross, N.—*Catalogue of Roses, Trees, &c.*  
George Cooling, Bath.—*Catalogue of Roses and Fruit Trees.*

Boulton & Paul, Norwich.—*Illustrated Catalogue of Horticultural Buildings and Hot-water Apparatus.*

Frederick Gee, Biggleswade, Bedfordshire.—*List of Vegetables.*  
Auguste Van Geert, Gand, Belgium.—*General Catalogue of Plants.*

Elwanger & Barry, Rochester, N.Y.—*List of Strawberries.*  
Jean Nuytens Verschaffelt, Gand, Belgium.—*General Catalogue of Plants.*

#### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense. Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

**SHORTLAND (G. B.).**—The best system is Pitman's. A book of instructions, price 1s. 6d., may be obtained from E. Pitman, 30, Paternoster Row, London.

**SEEDLING ANTIRRHINUMS (W. C.).**—They are good and in great variety, the self, spotted, and striped flowers being all alike attractive.

**GLOIRE DE DIJON ROSE FOR BEDS (Buxy).**—It is an excellent variety for pegging down in large beds, but if weaker growers are planted in the same bed it is apt to overgrow them. It is worthy of a bed to itself, and can be kept in order by judicious prunings. As your old specimen gets worse each year we should destroy it and plant young healthy plants.

**IXIAS AND SPARAXIS NOT FLOWERING (Idem).**—As the plants grew freely but did not flower you have probably kept them too close during some period of their growth. They require abundance of light and air to prevent the leaves being "long, slender, and delicate."

**REBUILDING FLUES (Somerset).**—Mortar made of lime and ashes will do for setting the bricks. Plaster the inside of the flues not more than half an inch thick. Ask any bricklayer about plastering.

**RHUBARB PLANTING (Cetewayo).**—Plant at least 3 feet from the hedge. The quantity of Potatoes you will require for planting an acre depends on the size of the sets and the distance between the rows and sets.

**CLUB-ROOT (J. N. B.).**—Charcoal dust spread about half an inch deep upon the surface and just mixed with it by the point of a spade, it is said, prevents the occurrence of this disease. Soot, we have reason to believe from a slight experience, is as effectual as charcoal dust. Judging from theoretical reasons we might conclude that it would be more specific; for, in addition to its being, like charcoal, finely divided carbon, it contains sulphur, to which insects also have an antipathy. A slight dressing of the surface soil with a little of the dry hydro-sulphuret of lime from the gas-works would prevent the occurrence of the disease by driving the weevils from the soil.

**GOOSEBERRY CATERPILLAR (F. R.).**—Open a trench 1 foot in depth at the extremity of the roots, and then scrape or shovel the surface soil from over the roots for nearly 3 inches in depth into the trench in the hope of burying and destroying the chrysalis, which probably are not embedded much deeper. The paring of soil should be well trampled down, and the occasion may be seized for manuring the roots in the circle or line excavated. Salt and soot might be used to cover the parings before tramping them down, or other strong matters which are at once fatal to insect life and a manure to the bushes. An effectual method for preventing the caterpillar was practised by the late Mr. Robert Hogg of Elogan Green, Berwickshire, which consists in simply covering the surface of the ground round the bushes with a layer of bark from the tanyard either in the autumn or early in spring; and this seems to have such an effect on the insect in its chrysalis state as effectually to destroy it.

**VARIOUS (Puddle).**—Continue to afford your Camellias cool treatment until the spring, when you may repot such as require it. The Coleuses must be placed in a stove temperature during the winter, or you will not be able to preserve them. They had better be cut back, as they will then make fine plants next summer. The Amorophallus produces its spathe and spadix from the root of the plant and not from the leaves.

**SAND OFF ROADS (Frank).**—So far from the sand being injurious to plants you cannot employ a better substance for mixing with potting soil. You have been very wrongly informed.

**LISTS OF BRITISH PLANTS (F. T. F.).**—Lists of the rarer plants found in Cornwall are given in the guide books, and a list of the flowering plants alone would be very imperfect indeed. Probably a Flora of Cornwall, including the Ferns, Mosses, Hepaticas, &c., might find a moderate circulation. If "F. T. F." will correspond with Mr. W. Curnow, Pembroke Cottage, Newlyn Cliff, Penzance, he will be able to obtain further information on the subject.

**LILIUM AURATUM AFTER FLOWERING (Two-and-a-half-years Subscriber).**—The plant should be kept in a light position until the foliage turns yellow, merely supplying sufficient water to keep the soil moist. When the foliage has fallen and the stem yellow, turn the plant out of the pot, remove the soil from above the bulb and any soil not occupied by roots, and twist the stem off. Drain the pots well, place the bulb with its roots in the centre and so that its crown will be about 2 inches below the rim of the pot, potting moderately firm, employing a compost of two-thirds fibrous loam and a third of sandy fibrous peat, with a fourth of leaf soil or thoroughly decomposed manure. The plant may be wintered in a pit or house from which frost is excluded, having just sufficient water to keep the soil moist. When growth takes place a light airy position must be afforded, and the water supply increased with the growth, top-dressing the surface to within half an inch of the rim of the pot when the growth is 6 inches above the rim of the pot, employing the same compost as advised for potting. Supplies of weak liquid manure about twice a week when the plants are in free growth and until the flowers expand will be advantageous.

**THE BILBERRY (E. A.).**—You will no doubt find it growing on the Surrey hills from Reigate to Guildford, and also on the Sussex downs.

**VARIETIES OF MELONS (R. S.).**—The following varieties would probably suit you:—Colston Basset, Broomham Hall, Dell's New Hybrid, Read's Scarlet Flesh, Victory of Bath, Tremham Hybrid, Cox's Golden Gem, and Hero of Bath. Sow the seeds early in the year at different periods to afford a succession. Bollison's Telegraph Cucumber is one of the best for general purposes.

**POTTING CYCLAMENS (A. Lady).**—The corms have been potted too deeply. They should not be more than half inserted in the soil, as when they are covered with soil to the crown the leaves and flower stems are apt to damp off. The compost you employ is suitable for them.

**TROPÆOLUM JARROLDII (Idem).**—Pot them at once in light fibrous loam and a third of leaf soil, inserting them about an inch deep. Place the plants in a greenhouse, watering only to keep the soil moist, and assign them a light airy position. Being climbers they will need a wire trellis or other means of support.

**BRIARS FOR ROSE STOCKS (Idem).**—The stocks should be secured so soon as the leaves fall. The best time to secure and plant them is from the middle of November and early December, or the early part of the winter. Autumn-planted stocks succeed very much better than those planted in spring.

**STANDING CAMELLIAS IN SAUCERS FILLED WITH SAND (A. B. C.).**—Although a cool bottom—as that of stone or slate shelves, or it may be gravel—is preferable to stand the pots upon, a damp bottom is not by any means essential, as Camellias succeed admirably upon a stage. We should have an inch thickness of gravel to stand the pots on, so as to enable the water from the pots to pass away quickly. Tulips succeed admirably in a compost of turfy loam with the turf well reduced, and a fourth of well-decayed manure thoroughly incorporated with the loam, adding about a sixth of sharp sand.

**RAISING SOLANUM FROM SEED (Idem).**—The Solanum is probably capricious, which may be raised from seed sown early in March in gentle heat. Pot off the seedlings when large enough to handle, and grow them on in a greenhouse well exposed to light during summer. They will flower and fruit the first year, but more freely as the plants become older.

**PRUNING THE MEDLAR (P. D.).**—Proceed on the same system as you would with a Pear tree. Thomson's "Manual of Fruit Culture" would probably suit you.

**AURICULAS (E. F.).**—The "Garden Manual," published at this office, price 1s. 6d., or by post 1s. 8d., contains full instructions on the subject of Auricula growing. The following varieties are very good:—*Green-edged*: Fairy Queen, General Havelock, George Lightbody, Lovely Ann, and Imperator. *Grey-edged*: Alma, Colonel Champneys, Competitor, Lancashire Hero, Richard Healdy, and Robert Trill. *White-edged*: John Waterston, Robert Burns, and True Briton. *Sels*: Blackbird, Charles J. Perry, Meteor Flag, Metropolitan, Negro, and Rifleman. *Alpines*: Black Prince, Colonel Scott, Diadem, Dolly Varden, Indian, John Leech, King of the Crimson, Masterpiece, Rubens, and Triumphant.

**NAMES OF FRUITS (M. D. D.).**—We cannot spare space for such lists as you need; select lists are included in our "Fruit Gardening for the Many." We will send it if you enclose 4d. in postage stamps with your full address. (*Mrs. E. Wyld*).—The Cherry Plum (*Prunus Myrobalana*). (*S. M. W.*).—1, Swan's Egg; 2, Vicar of Winkfield; 3, Ficus de Naples; 4, Too small, and cannot be identified. (*S. Mace*).—We do not recognise the fruit sent as any variety known in general cultivation.

**NAMES OF PLANTS (P. T. F.).**—*Orebanche major*. (*J. O.*).—Your Fuchsia is much like some others already in cultivation, and is not an improvement on them. The Fern is *Davallia tenuifolia* var. *stricta*. (*S.*).—It is a species of *Stapelia*, but we cannot name it from such a fragment. (*R. P.*).—The specimen was too crushed to be recognisable. (*A. M.*).—The Fern is *Woodwardia radicans*. (*P. T. F.*).—1, *Juncus uliginosus* (Bog Rush), a viviparous form which happens frequently to this plant in very moist situations, and particularly so in wet seasons like the present one. It appears to have the power of bringing forth young plants, occasioned by the non-perfecting of seeds. 2, A species of *Callitriche* (Water Starwort), but in the absence of specimens in fruit or seed it is impossible to determine the species; 3, *Ruppia maritima* (Sea Ruppia). (*A. Subscriber*).—1, Resembles *Begonia biseriata*; 2, *Begonia Dregel*; 3, A variety of *Godetia*; 4, Apparently *Sedum spectabile*; 5, *Sedum Sieboldii*; 6, A *Saxifraga*, but the specimen was not sufficient to identify the species; 7, *Campanula isophylla*. (*H. S.*).—*Phalaris canariensis*. (*Major L. Forbes*).—1 and 2 are varieties of *Acer platanoides*. The other specimen is *Populus canescens*. (*P. Walker*).—1, *Oxalis corniculata* rubra; 2 appears to be a *Sisyrinchium*.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### WHITE MUSTARD AS A FOOD AND FALLOW CROP.

THIS crop has been for many years recognised by the experienced farmers as a valuable addition to the green crops formerly in use, and it is good either to feed sheep or to be ploughed in as a green manure. Its cultivation for either purpose has lately rather fallen off in the presence of other green crops, such as vetches, &c., and owing to the general use of artificial manures. Some persons have been deterred from sowing it, as it is sometimes confounded with the black or brown mustard. The white mustard, however, is that which is grown in our gardens to use as a salad, and is the *Sinapis alba*; the brown mustard being the *Sinapis nigra* of Linnaeus. The black mustard may well be avoided

by the home farmer who wishes to keep his land clean, as the seed of this plant if allowed to come to maturity and fall out upon the ground, will come up in the future to the damage of the cereal crops; for, like charlock seed, it will remain in the land for an indefinite time and retain its vitality. White mustard, however, is a much more harmless and useful plant, for in the event of its shedding the seed it germinates so quickly, and is so easily killed by frost, that when saved as a seed crop but few plants will be found in the succeeding crops after an ordinary winter. White mustard will grow upon all soils provided the climate is favourable; still, like most other green crops, its luxuriance of growth will be in proportion to the fertility of the soil. In addition to its growing upon all ordinary turnip and wheat land, it is found to flourish greatly upon peat soils as well as upon very tenacious clays if carefully cultivated and the land made very fine on the surface, for a good tilth like that required for turnips is essential to its successful cultivation.

We usually sow from 16 to 18 lbs. of seed per acre, and it is best to sow the seed broadcast by Bennett's hand machine. In order that the seed may all be buried at a regular depth the ring roller should go over the land before sowing the seed, as it will then fall into the little grooves made by the rings of the roller. When chain-harrowed a single time the seed will be buried in the best manner to insure its germinating with regularity. It is, however, extremely important that the ground should be moist at the time of sowing, otherwise if the land is dry and cloddy the seed will remain in the land without germinating until the weeds gain the ascendancy. The time of sowing will vary according to circumstances, and may be done as the crop will be required from the 1st of May until the 1st of September; and if the autumn proves mild a fair crop for ploughing-in may be obtained, or for feeding sheep, if upon dry healthy land after the latter date. This crop is often sown instead of stubble turnips after a crop of wheat or early oats, and when either fed-off or ploughed-in will forward the land in condition for a succeeding crop.

This subject seems naturally to be divided into two points, first the feeding-off the crop by sheep on the land, and secondly the ploughing-in the produce as a manure, and at the same time smothering the weeds and likewise cleaning the land, so that by the repetition of the crop and the ploughing and tillage consequent upon it the land may not only be manured but clean fallowed simultaneously. First, for sheep mustard is a healthy food, and more especially for ewes in lamb at the fall of the year, but like all other succulent vegetable produce it should be given sparingly at first, and in conjunction with other food like the grasses, saintfoin, &c., during the first few days of feeding so much the better; mustard being of a pungent nature, it is well calculated to assist in the digestion of other food. The analysis of the green plant will exhibit its nutritive value as a fodder plant, and also that it competes favourably with other green crops, including turnips, and is as follows:—

Nitrogenous compounds.....	2.87
Heat and fat formers.....	4.40
Vegetable fibre.....	4.59
Mineral matter.....	2.04
Water.....	86.30

100.00

As this crop is in perfection just before it comes into bloom it is desirable that it should be sown at different times, say once or twice a week, in order that it may be fed off in succession as it becomes fit and of most value, and in such acreage as the number of sheep will probably require. All green crops of this nature, particularly rape, are very likely to cause the sheep to become hoven or blown when first turned into a fold of it. Our plan to prevent this consists of letting the sheep feed twenty minutes then drive them off the fold for the same time, so that when they return to the food they may not overgorge themselves. From the time of sowing mustard will be fit for feeding at the end of about seven weeks, or six weeks if the land is in high condition or has received 1 cwt. of nitrate of soda per acre at seed time. This application frequently doubles the bulk of the crop. It is, how-

ever, in cultivation necessary that on the mixed soils the land should be fresh in chalk or lime, for we recollect once sowing mustard where the Swedes had died off with clubbed roots, that the mustard plants died off in precisely the same manner; not a single plant could be seen but suffered from clubbed root. With regard to the number of sheep which a good crop will feed, we have an illustration of it upon six acres of land sown with white mustard, four acres on the 10th of May and the remaining two acres on the 16th of May, and on the 21st of June the crop was 2½ feet high, when it was commenced to feed 228 sheep and seventy lambs, which kept them twelve days in high and improving condition, being folded upon it at night, with only a bare lea field to exercise upon in the day.

The second part of our subject refers chiefly to the use of mustard as a manurial crop ploughed-in green, and at the same time effecting all the objects of a fallow—that is, to grow three crops in succession of an overpowering bulk to keep down weeds, twitch, and black grass; and to illustrate the method of doing so we will state an actual experiment upon a field of stiff poor clay which was covered with twitch, that is water grass, or running grass, as it is sometimes called, not white-rooted couch. It was ploughed 7 inches deep in the winter, then scarified 3 inches deep the last week in March, and after being well harrowed sown with white mustard seed broadcast at the rate of 16 lbs. per acre, and covered-in by light harrowing. This crop was just breaking into bloom the last week in May, and 26 inches high, when it was ploughed-in about 4 inches deep, and one hundred bushels of lime (after been slaked with salt and water), applied per acre. Then after one turn of the heavy harrows it was resown with mustard, care being taken that all which was ploughed in within the day should be resown on the same day it was ploughed, all being finished on the 1st of May. On the 8th day of July we began ploughing-in 6 inches deep this second crop, which was in height about 46 inches. As to accomplishing this we had some misgivings at first, but managed it well by attaching a heavy block of wood 12 inches wide and 18 inches long drawn by a chain attached to the hinder bolt or whippetree, and dragged just under the plough beam a few inches in advance of the coulter. This further served to regulate the depth of furrow instead of the plough wheel. We had also the usual drag weight and chain to lap the whole under the furrow. About six furrows at the last must be done by the horses at length, or else the land horse returning on the same track as he went forward ricks and entangles the long stems so much together that they lap round the coulter and choke the plough. Immediately after the ploughing we gave one or two turns of the heavy iron harrows, then resowed the mustard as before, the whole field being done on the 12th of July. The third crop was just coming into bloom on the 24th of August, and the length of the stalks 4 feet. This was ploughed-in 8 inches deep with four horses at length, followed by a two-ringed presser following one plough, thus giving each furrow a double pressure.

It is very important to consider in reference to the ploughing-in of mustard, or the making of a naked fallow, which plan is the least expensive; and if we reckon the number of ploughings, harrowings, rollings, &c., required in each case, we shall find the cultivation of mustard involves less labour than is required to keep the weeds and twitch down and cleared off the land in making the fallow, especially in a showery summer, because by the growth of mustard as above stated everything of the weed kind will be destroyed. In making a comparison of the advantages of feeding-off the mustard as against ploughing it in, we do not think there is much difference, except that it is more difficult when the requirements of the sheep are considered, to carry out the feeding and resowing with so much nicety as to time of feeding, &c., as in ploughing-down the crop. It is also worth consideration as to the effect of ploughing-in upon light soils compared with heavy land, for although the manure left in the land may be the same in both cases, yet the mechanical action of the stalks and woody fibre which would in most cases be a disadvantage to loose soils, would prove a most important factor in ameliorating, lightening, and generally improving the working and cultivation of all clay soils.

#### WORK ON THE HOME FARM.

**Horse Labour.**—This will still be required in harvest work in the late districts of the kingdom. At all other times when not so engaged the work attendant upon the wheat season will be necessary, such as laying-out the manure upon the clover leas, and ploughing and pressing the land immediately, for the longer the land lies before being sown or drilled with wheat the better, especially if the land is heavy loam or clay. It will now be none too soon to begin sowing wheat in the cold backward districts; 2 bushels of seed per acre will be sufficient at the first season, but later on 2½ bushels may be required, whilst at the latest season, say November, 3 bushels will be none too much. The home farmer must this autumn expect nearly all his crop on their first showing above ground to be attacked by slugs, and this will more especially be the case when wheat is sown out of lea. The young plants of trifolium also will probably suffer; and as the acreage of this crop is not usually large it may be worth while to take a

little extra care to prevent the slugs from eating it off. Lime is but little use, because a slight shower washes it off. The best plan is to carry a cartload or two of cabbage leaves or the leaves of turnips, Swedes, or any vegetable leaves, and spread over the field. The slugs are sure to take shelter under the leaves at night time, and early in the morning women or boys may pick off the slugs and carry them away, and pursue the same plan the following morning. This is the only effectual plan to destroy slugs, and in a crop of so much value as trifolium it may be made to answer a good purpose, and so it may upon lea wheat if people can be found to do it, as it is only a question of labour. The outside and decaying yellow leaves of cabbages, &c., may be taken without injury to the crop for this purpose. Now the seed time has arrived it may be well to consider the varieties of wheat to be sown. The home farmer who has had experience will have noticed those varieties which suit the soil best under his management; but to those without much experience requiring seed wheat for cold and heavy loams we find the Golden Drop and Nursery, both red wheats, stand the winter well, even in elevated and exposed situations, and in case of loss of plant they are sure to tiller well and make up deficiencies. Upon light and friable soils in a mild climate, like most of the southern and eastern counties, we recommend Morton's Red Straw, Prince Albert, and the Essex Rough Chaff. These are all white wheats of good quality, but the latter variety is the best and most prolific upon land in the highest condition, as it is very short in the straw and scarcely ever becomes lodged or laid; at the same time it is one of the best grains for the miller. The season is now so far advanced that it is almost hopeless to expect to carry out autumn cleaning of the stubbles preparatory for roots next year, and in consequence all attention will be required to be given to sowing the rye, vetches, &c., and the wheat land.

**Hand Labour.**—The young plants of cabbage will now be strong enough to set out for an early crop in the spring. The remnants of the plants of Thousand-headed cabbage may be planted out in some fresh-ploughed stubble land to furnish food for sheep in the spring, for although these plants may be rough and long-stemmed they are sure to live if planted now, and will give abundance of spring food, and they may be ploughed-in at little expense, much less than by planting with the setting stick. The harvest being so late there will still be some ricks to be thatched and trimmed. The straw ricks also should be carefully thatched, and if the straw is required for feeding cattle the straw should be spiced whilst building the rick. This will be more particularly required if the straw is intended to be used for feeding sheep, as much of it this year will be no doubt, the hay having been got up so badly. The dairy cows have done badly lately where they have depended upon grass food only, for we know several dairies which for six weeks past have not furnished so much milk to be sent to London this year by from 40 to 50 gallons per day as they did the year before, and it is just such seasons as this when it answers a good purpose to give the cows cake, maize, cracked beans, or millers' offal in addition to the grass they may get in the pastures. The time is now arrived, too, when we must expect the nights to be cold; and as the pastures will be wet lying for the weaned calves we recommend, therefore, that they should be taken to a dry paddock with hovel attached at night time, or else into a yard and dry shed, and receive some artificial food mixed with hay chaff. For very young calves at the time of weaning we must call attention to Bowick's "Farina," an article just coming into use, and highly recommended; requires no boiling, is a perfect food for calves and young stock, and a complete substitute for milk. This is sold by T. Bowick and Co., Bedford. The price is 25s. per cwt., with full directions for use, and we say to the home farmer, Give it a trial. In buying in store cattle for winter feeding in yards or boxes we beg to suggest that it may be well to consider the policy of another plan, as our importations are likely to depress the value of fat beef. That is to buy in good shorthorned milch cows with calves at foot and give them the usual allowance of food for fattening an ox, keep them in the stalls in the same way, and sell milk or feed calves for veal as may be most convenient.

#### THE HEMEL HEMPSTEAD POULTRY SHOW.

THE second Hemel Hempstead Poultry Show took place on the 1st and 2nd inst. It was not so well favoured by the weather as the first Show last year; still, in spite of heavy showers, it was well attended, and the whole neighbourhood seemed interested in the event. Not the least attraction was the great incubator tournament, on which we comment elsewhere. There were, too, many good and useful poultry appliances on view; travelling baskets, artificial mothers, Pigeon feeding boxes, &c. The local poultry and Pigeon classes occupied one immense marquee, and attracted much attention. We thoroughly approve of this arrangement, and believe that if it were more thoroughly carried at all country shows something would really be done towards improving the breed of poultry in the country and encouraging its cultivation. Many of the local exhibits showed great merit. The finest bird in that section, which this year was confined to birds of the year was undoubtedly the Crève pullet to which the



five-guinea cup was awarded. Brahmas, Dorkings, and Game Bantams were all good classes, and the Ducks magnificent, especially the first-prize Pekins. We do not like the system of cockerels and pullets competing singly against each other; it is almost impossible to compare their respective merits fairly, and a judge is much tempted to allot prizes alternately to the two sexes. When noticing the Hemel Hempstead schedule we attempted to describe the method to be pursued in allotting honorary prizes to the various sub-varieties in one class. As far as we could see it was not carried out by all the judges, and we doubt if it worked well. The honorary prizes were not printed in the list, and consequently in some of the classes few pens seem to have been noticed, in which the Judge wished many to be distinguished by these honorary cards.

*Dorkings* came first in the open classes, and a noble Dark cockerel indeed was first on the list. He had come all the way from Ireland, and had borne his journey well. Second another good bird; his equal in points, though not in size. There were many fine pullets among the Darks, but nearly all too dark in feet. A beautiful silvery cockerel was first in the Any other variety Dorking class, and a forward White second.

*Cochins* were not strikingly good. The first Buff, a pullet, was admirable in shape; and the second, a cockerel, handsome too. Partridge were better than White. First a cockerel, and second a well-pencilled pullet.

*Brahmas* were far better than the Cochins. In Lights first and second were two fine cockerels, the first magnificent in shape. In Darks pullets carried off the palm. First a grand bird in form, and beautiful in pencilling.

*Game* made small classes. The Piles were much better than the Reds. The first Pile cockerel was extremely forward and good.

*Hamburgs* two fair classes. In that for Golden of both kinds nearly every pen was up to a good average. A pencilled cockerel was first, a pullet ditto second, and a spangled pullet third. The Silver class was small. All the prizes went to Spangles. There certainly is a great opening in the south of England for Silver-pencils. We were glad to learn from the Judge of these classes (Mr. O. E. Cresswell) that he considered them very honestly shown. It certainly is something to hear of two classes of Hamburgs all with natural combs.

*Polands*.—As usual in these days Silvers were ahead. First a beautiful pullet, second a fine cockerel; a Golden pullet came in third. Two White-crested Black cockerels were shown, but were better in crest than carriage. Several Padua Chamois put in an appearance, but the best unfortunately were sent in pairs instead of singly.

*Spanish* were not remarkable beyond the first-prize cockerel, which had a face of beautiful texture.

*Houdans*.—The cockerels of this breed seem deteriorating. We saw no good one in the Show. First and second were really fine pullets.

*Crève-Cœur*.—Some fine and massive birds were shown. The first cockerel was specially good, and a fine and cheap pullet second.

*Leghorns* were one of the best classes. Their admirers are to be congratulated on the great improvement now to be seen in both varieties. A White cockerel was first, a Brown pullet second, and a White pullet third; all super-excellent birds.

*Andalusians*, too, made a good class. The first cockerel was easily ahead; second a pullet, too dark in hackle to please some fanciers; third a younger but very fine cockerel.

*Any other Variety* was a remarkable class for its size. The Judge awarded five instead of three prizes, as he was empowered to do by the rules. First was a beautiful Black Minorca cockerel, equal second were a nice Black Hamburg pullet and a La Fliche cockerel, equal third a Black Hamburg pullet and a Malay pullet.

*Bantams*.—The Game Bantams were only fair. The first Black Reds were slim and good in style. In the Variety class Golden Sebrights were first, nicely marked, but too large, as nearly all Sebrights are now-a-days; nice Black Rose-combed were second, and Silver Sebrights third.

*Ducks*.—The first prize in the class for the larger varieties of Ducks was first awarded to a grand pair of Ronens; the drake certainly had a very suspicious look about his wings. A protest was lodged against the award and was sustained. The first prize then went to a grand pair of Aylesburys; second to Pekins; and third to Aylesburys. The Variety Duck class contained nothing very new, though the birds shown in it were chiefly in nice condition. Spotted-billed Ducks came in first, Carolinas second, and Whistlers third.

*Pigeons*.—Considering the time of year the show of Pigeons was good, though the great feature of the Show is the poultry. A grand Black Carrier was passed by, we suppose because the Judge thought him not honestly shown. The first Dun Carrier was a noble bird with beautiful beak wattle. In Pouters a capital White came in first; Short-faced Tumblers were good, the winners all Almonds. Barbs were few but good. Two good Yellow Jacobins came in first and second, well ahead of the rest. Fantails neither deserved or received any prizes. Turbits were about the best class; the first Blue and second Red, such birds as might win anywhere. We rather preferred the second Blue Dragon to its owner's

first-prize bird. The Variety class was small and contained nothing remarkable.

The Judges were as follows:—In the open poultry classes Mr. O. E. Cresswell judged the Dorkings, Cochins, Hamburgs, Polish, and Any other Variety; Mr. S. Matthews the Game and Game Bantams; and Mr. Leno the remainder. Mr. Esquilant took all the open classes of Pigeons. The local poultry classes were judged by Mr. T. C. Burnell, Rev. G. Raynor, and Mr. W. B. Tegetmeier. Mr. T. Burnell and Mr. Tegetmeier judged the local Pigeons.

## THE INCUBATOR CONTEST AT HEMEL HEMPSTEAD.

WE give elsewhere the result of the second great contest of incubators at Hemel Hempstead. It is about a year and a half since the promoters of this Show announced that in connection with their show of poultry in the autumn of 1878 a grand contest of incubators would be held. The resolve was a most patriotic one, intended to prove in the first instance for the benefit of the people of Hertfordshire, and secondly for that of poultry breeders in general, if there were any incubator which could really be trusted to without any excessive amount of care to do the work of hens, and if so which of the many machines was the most reliable and most easily managed. The prize offered for the best (£25) was such as could not fail to secure the entry of any incubator worthy of notice. From time to time there has been considerable but fitful interest excited in artificial incubation. We can remember several incubators being brought out about twelve years ago; we tried two, but after infinite pains and trouble taken found the result most unsatisfactory, and we believe that nearly everyone gave them up, as we did ourselves, in disgust. The fact, however, remained indisputable, though not well known, that at various times, some very remote, and in many countries artificial incubation had been successfully carried on on a large scale, and that at this day the Chinese carry it on. Some time ago we translated several chapters of Reaumur's old book on the subject, in which he relates various experiments, some of which ended in success, made under very various circumstances in France. If in such primitive days care and observation could overcome all difficulties connected with the art, why in these times of scientific progress should they not be easily surmounted? The question probably occurred to many, and hence several fresh inventions in the way of incubators came out, and were quickly followed by a new revival of interest in the subject.

This great contest was arranged most opportunely, and was, as we believe, most admirably and fairly carried out. Our readers probably remember its conditions and method; each exhibitor of an incubator had to send his machine with full directions for its management. They were placed under the care of an impartial and intelligent person in a building to which some of the managing committee alone had access, and the incubator which in twenty-one days precisely hatched out the greatest per-centage of chickens from the fertile eggs in it was the winner. The prize was awarded to Christy's, which was far ahead of the other competing machines. This incubator is on an entirely different principle to all those generally known before. How far it is an original invention we do not pretend to say, for there are French incubators on the same principle. Its peculiarity is that no lamp is required for it at all; it is heated by hot water, and twice a day a certain amount of water is drawn off from its cistern, and a certain amount of boiling water added. The method seems a simple one and commendable. Unfortunately the unsuccessful exhibitors did not bear their defeat so philosophically or so good-humouredly as could have been hoped. They grumbled at the way in which the contest had been arranged—viz., at the management of the incubators by one impartial person, and consider that they ought each to have superintended their own. One indeed, or rather we believe his agent, went so far as to impute partiality if not dishonesty to the manager of the contest and to some of the chief promoters of the Show. The mode of competition had been carefully arranged after much consultation, and the result had not been doubtful; so for our own part we should have been inclined to rest content with its results, and leave the grumbling exhibitors to improve their imperfect machines to their own perfect satisfaction, if not to that of the public. However, the energetic people of Hemel Hempstead decided to give them another chance, and offered another prize, this time £10, for the best incubator. The method of contest was this year varied; each exhibitor was allowed to manage his own incubator in accordance with the wishes of the majority who competed last year. The keys of the building in which the contest was held were given to one responsible person, and the various exhibitors were admitted at stated times to attend to their incubators.

The result which we give elsewhere shows two facts:—1st, That under these altered conditions of competition one of Christy's incubators again has won the first prize. 2nd, That there is a great general improvement in the average number of chickens hatched from the machines collectively, one of which alone failed altogether from some difficulty with the management of the gas.

This result seems to us very satisfactory, for the obvious conclusion from it is that there is one incubator in which considerable reliance can be placed, for we understand that it was managed by a local person who knew nothing of incubators before, and not by any expert specially sent down, and also that there are several others which are in a fair way to be made practically useful, though at present their working is not so simple or their results quite so startling.

We regret to learn that the unsuccessful exhibitors again refuse to take defeat gracefully, and soon after the termination of the contest addressed something like a collective protest against its management to the authorities; one even went so far as to make grave imputations against some person or persons whom he did not name. We trust that ere this the excitement of the moment may have calmed down, and that the protestors in a calmer frame of mind may have withdrawn their objections. The Committee of the Hemel Hempstead Show have been most spirited and most public-spirited in originating and in twice carrying out so interesting an experiment. They have quite effected their object, and consequently, we believe, there is little chance of another contest taking place. That a wide circle of poultry fanciers and Game breeders is heartily obliged to them for what they have done we have much reason to know.—C.

### VARIETIES.

THE Dairy Show, which will take place in the third week of this month in London, will be attended in a prominent manner by German dairy producers. The "Milchwirthschaftliche Verein" has taken the management in hand—about 140 entries in the classes of butter and cheese have been made. In latter years in Germany very much has been done for the development of the dairy and improvement in the butter and cheese making, and the coming show will be an occasion to make ourselves acquainted with the results obtained.

MR. H. M. JENKINS, Secretary of the Royal Agricultural Society of England, has been appointed Assistant Commissioner in charge of the reports to be made upon European agriculture. He will be assisted in the necessary investigations by Mr. C. L. Sutherland of Coombe, Croydon. Mr. Jenkins has already commenced his inquiries in Holland, and Mr. Sutherland has started for Paris, with a view to inquire into the corn-growing districts of France.

THE second great contest of incubators held at Hemel Hempstead was brought to a close at noon on Wednesday, October 1st, when the first prize was again awarded to one of Christy's incubators. The analysis of the working of the various incubators is as follows:—

	No. of eggs originally placed in incubator.	No. found unhatched on sixth day.	No. found fertile.	Number hatched out.	No. found in drawers unhatched at noon October 1.	Percent ge hatched.
T. Christy & Co. No. 2.	80	9	71	69	3	97.18
C. Cashmore No. 2.	80	8	43	24	18	57.14
T. Howell No. 1.	100	33	67	38	29	56.71
T. Christy & Co. No. 1.	100	10	90	39	51	43.23
F. Howell No. 2.	60	7	53	30	33	37.73
Watson.	60	6	54	11	43	20.57
C. Cashmore No. 1.			Failed.			

THE *Prairie Farmer* states, that for the week ending August 30th, there were shipped from Atlantic ports 4,500,000 bushels of wheat. For the six weeks ending August 30th, the exports of wheat exceeded those for a corresponding period last year by 9,970,000 bushels.

WE regret to have to record the death of another poultry fancier, Dr. Etheridge of Bromyard, which took place somewhat suddenly on Friday evening 26th ult. Dr. Etheridge was well known as a fancier of Game, and some of his chickens, which were actually at the time of his death at the Worcester Show, were very remarkable and promising.

A REPORT from New York published in the *Toronto Mail* states that the export of dressed meat to the English market, which reached large proportions two years ago, but was temporarily suspended in consequence of the increasing shipments of live cattle, is about to be revived on an extended scale. The action recently taken by the British Government to check the exportation of cattle from this country has produced its natural effect. Large dealers in cattle and beef have given up exporting live cattle and again turned their attention to the export trade in dressed beef, and a new system of refrigerating is being put into action, whereby the necessity of using ice on board the steamships will be done away with. It has been found, through numerous trials in exporting meats, that they must not be frozen, but only kept at a temperature which will delay decomposition. The new system is said to be perfection. The cooling process is produced by means of compressed air, which can, if necessary, be reduced in temperature even below zero. It is expected the fresh meat trade to

Great Britain can be revived to its former magnitude, and even exceed it.

### THE TREATMENT OF FOUL BROOD.

(Continued from page 282.)

THE great importance of the question of foul brood and the urgency with which remedies are called for has been evidenced by the number of letters I have received since I have addressed myself to its consideration in the columns of this Journal. After giving, by Mr. Cowan's kind permission, his plan of operations I promised to say something of the method I had adopted, and by which success of a very marked kind had been obtained; but before entering upon this it may be interesting to speculate as to the reason salicylic acid effects a cure, and as to how far it may be employed to ward off a chance attack without injury to the bees. Salicylic acid has been found to act upon the human system as a retarder of oxidation; in simple words it reduces the rate at which waste goes on in the body, but as a natural consequence it lowers vital action and interferes with the production of animal heat. Carbonic acid is given off in reduced amount by an animal to whom a large dose of salicylic acid has been administered. Now it is well known that the growth of fungi is always attended with the production of carbonic acid, so it is perhaps probable that salicylic acid is a fungicide, as Cork calls it, or an enemy to fungoid life, because it arrests that very process which is a vital action of the fungus. If this be true, or even if it be not, we now see that perhaps some disadvantage may arise from an excessive use of the remedy. I note this because I am glad to be able to testify to feeding continually, with no observable bad effect, with food containing four or five times as much acid as Mr. Cowan recommends; and as his strength was curative, of which we have his evidence, we see that it is safe to use even more of the remedy than is demanded by the disease without appreciable injury to the patients. Mr. Cowan's mixture (see last issue) for spraying combs and painting hives is about one-eightieth part by weight salicylic acid; while Mr. Hilbert effected an absolute cure by spraying with a mixture containing one part of the remedy in 150 water; and Muth, who first suggested borax for the purpose of rendering salicylic acid more soluble, used a mixture consisting of one of the latter diffused in sixty of water.

In treating an infected hive it should be remembered that cutting out the combs dotted with dead grubs and then allowing the bees to build again not only does not remove the infection but it weakens the stock. This plan, which is the one expedient of some who should know better, is about as intelligent as would be cutting off a man's leg to cure him of scarlet fever. The honey left to the bees has been dusted by the spores before it was sealed, and there these remain to be given in the pap the nurses are always dispensing to the wanting babies. The disease is thus left to establish itself anew, giving more work to the exciser of combs, till the poor colony dies of disease and the doctor. When combs are in a very decomposed condition they may have to be taken away; but I do not believe, rather I have not found, this step to be generally necessary. It is in my opinion far more necessary to remove the store; for, supposing the honey to carry no infection, it is at least the means of preventing our remedy being given to the grubs. Remove the store and feed with syrup containing salicylic acid, and the bees themselves in nourishing their progeny become the dispensers of the drugs we have provided. While this feeding is going forward we periodically, about every three days at first, inspect the hive, and lifting out the combs singly, we open with a penknife all cells supposed to be diseased. The spray-producer is then called into play, and the fluid for this spray I always use as hot as possible, for if it were boiling in the vessel it comes out in so fine a rain that evaporation immediately cools it completely.

The apparatus which has carried me through all the treatment necessary for many cures is Maw's shilling scent-diffuser, consisting of an indiarubber ball, a small bottle with screw neck, and the necessary tube adjustment. The bees are chilled and tightly grip the comb, but they quickly recover when the hive is shut. The next inspection sees the before-explained process repeated; other cells are opened, all are sprayed, and thus in a few times no cell in the hive but has received some of our fungicide and the disease succumbs. In milder cases no more than this will be needed, but in neglected ones the worst broodcombs had better be replaced and the hive changed, the old one being thoroughly washed with strong salicylated solution. The idea that the queen should be removed to stop the production of brood and give the bees time to clean the combs is not, now at least, to be entertained. Where foul brood exists in any hive in the apiary none are safe, and most are in all probability already tainted, so that feeding with salicylated syrup is at all times desirable. My practice, as I stated previously, has been to give about thirty grains—a small teaspoonful—of acid with each 14 lbs. of sugar made into syrup, Mr. Cowan using only eight grains for the same amount; and from my larger quantity no bad symptoms have arisen, while no trace of foul brood has appeared in any hive for two seasons.

The Rev. G. Raynor lately informed me that he thus always added salicylic acid to all food given in his apiary, and that he has had perfect immunity from any attack. This medicated syrup is simply made by adding to the sugar and water as it is heating on the fire the required quantity of salicylic acid, to which previously about a quarter of its weight of powdered borax has been added.

America with its large apiaries would have suffered awfully from the ravages of this enemy had it not been for treatment, but the intelligent apiarists of that country have so well fought the disease that it is disappearing from amongst them. So let it be with us. Our neighbours the Germans have found us a remedy; let us use it and spread its fame abroad until foul brood shall become a curiosity.—FRANK R. CHESHIRE, *Avenue House, Acton.*

### HEMEL HEMPSTEAD BEE SHOW.

Of the county associations none are stronger than that of Hertfordshire, although it was called into existence last year only. The wonderful energy and self-sacrifice of its Hon. Sec., the Rev. Herbert Peel, is no doubt in large part the reason of its rapid growth, enabling it thus early to organise and successfully carry through such an exhibition as it held in the Bury Grounds, Hemel Hempstead, October 1st and 2nd.

The schedule comprised fifteen classes, which were generally well filled; and indeed in honey the number and quality of the English exhibits were the best this year of disappointment produced. It was highly gratifying to those who are at so much pains to spread a better knowledge of rational bee culture to find no less than nine men of the county entering the competition in bee-driving—i.e., if one may be reckoned as a man whose age appeared to be about thirteen. So creditably, too, did these acquit themselves that the winner ran neck and neck with the best in a similar competition open to all England. The Rev. G. Raynor, and Messrs. Cowan, Cheshire, Tegetmeier, and Martin acted as Judges, and appeared to give general satisfaction. Bees call for no special remark, except that Mr. Abbott's Ligurians were well marked and Messrs. Neighbour's Hungarians distinct. In Class 8, for the most complete hive on moveable-comb principles, there were twelve entries. Messrs. Hooker and Abbott were placed first and second as at Kensington and for the hives then shown, and which were then described in these columns. The crates of sections of both have been slightly improved, Mr. Hooker's being to our mind the most convenient of any yet seen. Mr. Abbott has not yet added separators, without which sections cannot be used to advantage, since their combs will never be straight enough to admit of glazing. Mr. Clapp takes third honours with a good hive. Mr. Ploton and Mr. Franklin appear as local recruits to the ranks of hive-makers. The exhibit of the first is well made; that of the second is too fanciful to be useful, while its stand is far too small for safety. Class 4, cottagers' bar-frame hive, price limited to 10s.—Mr. Fuggle again first with splendid value for money. Mr. Baldwin second, and Messrs. Abbott third, the exhibit of the latter being weakest in its sections, which are rickety and would plague the most skilful operator. In Class 5, straw hive with moveable combs, Mr. Neighbour first. We preferred Mr. Abbott's, but this did not conform accurately to the schedule.

Class 6, section crates. Mr. Steel first with a crate with tightening slides and separators, an arrangement good and cheap, but not equal to parallel wedges, which strangely no one shows except Mr. Hooker. Second, Messrs. Neighbour with queen-excluder and separators. Mr. Abbott third with sections, cheap, but again without separators.

In Class 7, extractor, Mr. Watson won with a good useful machine now well known, "The Little Wonder" coming second, while third place is given to an evident copy of No. 2. Mr. Steele exhibits, but his extractor has been made in ignorance of the laws of centrifugal force, which the Judges in this class (Mr. T. W. Cowan was of the number) as scientific men spotted of course, and justly left the extractor out of the competition.

In sections of honey many fall behind, not because the year has been bad, but because they have not yet learned the art of section-producing. Clearly the separator is as yet unknown in more apiaries than one from which sections went to Hemel Hempstead. In the All-comers' class Mr. Cheshire stood first with sections of great beauty. Class 9, Hertfordshire section, Mr. S. Thorne first and second, Miss Gayton third; Rev. H. W. Hodgson and E. Gulston highly commended. Class 10, single sections, S. Thorne first and second, Miss Gayton third; G. Freeman and E. Gulston highly commended. Class 10A, all comers, Messrs. Neighbour first, Mr. Cheshire second. Class 11, extracted honey, Mr. S. Thorne first, Mr. J. Clapp second. This honey was in great quantity but of bad colour, probably through the prevalence of the sycamore aphid. Class 12, comb honey, Mr. S. Thorne first, Mr. Slough second. Class 18, glass supers, Mr. S. Thorne, Mr. Clay, and Mr. Loyd first, second, and third.

The driving competition amongst the local bee-keepers was most interesting; and as some of the competitors were quite of the cottager class, shows that centres of influence are multiplying which must at length abolish the sulphur pit and establish a better system.

In the open competition Mr. Walton completed driving and transferring in ten minutes and a half, and so won, Messrs. Baldwin and J. Abbott following second and third; while Messrs. C. N. Abbott and Martin had the fates against them, as both were out of it through missing their queens.

The Rev. E. Bartrum kindly lectured during part of the afternoon of Wednesday to the assembled spectators, Mr. Cheshire doing the same on Thursday. The Hon. Secretary had, as is his wont, arranged all prize moneys before the close of the exhibition, and these were distributed to the successful by the Countess Grimstone in the Committee tent in the presence of the assembled visitors, whose hearty cheering of the Countess and the esteemed Hon. Secretary brought the first Hertfordshire Exhibition to a termination.

### OUR LETTER BOX.

**WILD FOWLS (Novice).—**They are Teal, probably.

**CHEAPEST FOOD (M. M.).—**The best and cheapest artificial food for bees is made from sugar and water boiled together at the rate of 1 lb. of sugar with one pint of water. Let the syrup boil for half a minute. Antism feeding should be done rapidly—that is to say, as fast as the bees will take the syrup from the feeders. Slow continuous feeding is not desirable now, for it may cause the bees to fly too much abroad, and also to breed at an improper season. The quieter bees of strong stocks sit during the months of October, November, December, and January the better. Let your bees have enough now to last them till March.

**BROWN COMBS, &c. (Bugs).—**The brown combs you speak of would be a greater hindrance than a help to a swarm next year. They are worse than useless for future use. Boil them down for wax. Any respectable ironmonger would supply you with a spring steelyard to weigh hives or anything up to 70 lbs. If your bees have not enough to keep them alive till March give them more: 12 or 14 lbs. of honey or syrup stored up would serve an ordinary strong hive in an ordinary season from the beginning of October till the end of March. Very large stocks well peopled have been known to eat 24 lbs. and 25 lbs. each during the autumn and winter months. In hard winters less food is consumed than in warm ones. By using the smoke of corduroy you will soon become expert and courageous in examining your hives.

**QUEEN FLYING (T. F., Cold Harbour).—**Laying queens never, at least we have known of two exceptions only, fly from their combs when their hive is opened; but queens that have had a long journey, like the Italian mothers, are disposed to fly when the boxes in which they have been packed are opened. If they do so let the box remain, and they will in a few minutes return to it.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 25' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.						Rain.
1879. Oct.	Barom- eter at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		In sun.	On grass.	
		Dry.	Wet.			Max.	Min.	deg.	deg.			
We. 1	Inches	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.		
Th. 2	30.087	57.4	56.7	S.W.	55.1	64.0	53.7	73.2	52.7	—	0.000	
Fri. 3	30.180	54.5	51.2	S.W.	54.5	60.6	45.4	105.6	40.3	—	—	
Sat. 4	30.243	50.2	44.6	W.	53.0	59.0	40.0	84.0	35.0	—	—	
Sun. 5	30.301	56.6	53.6	W.	52.9	67.4	50.0	118.9	45.3	—	—	
Mo. 6	30.359	56.0	55.2	W.	54.0	62.0	48.6	71.4	48.1	—	—	
Tu. 7	30.423	57.3	55.4	S.W.	54.2	66.4	52.6	105.6	46.4	—	—	
		55.8	53.9	S.S.E.	54.3	66.3	48.3	105.7	41.1	—	—	
Means	30.156	55.4	53.2		54.0	63.8	48.4	98.5	43.5	0.000		

### REMARKS.

1st.—Damp and drizzling in first part of morning; rather windy in the middle of the day, with just a glimpse of sunshine afterwards, one or two slight showers; fine afternoon and evening.

2nd.—Fine day throughout, with one or two sudden showers in the morning.

3rd.—Rather cold, but on the whole a fine day, though at times cloudy.

4th.—Fine bright day, and a good deal warmer; a little cloudy in afternoon; misty evening.

5th.—A dull and oppressive day, though fair.

6th.—Fine bright day.

7th.—A little dull in first part of morning, afterwards fine and bright.

The weather on the whole has been very fine and pleasant, though some days were rather cold. The mean of the barometer readings is high and somewhat above that of last week; in fact, it has been higher each week since the beginning of September. The mean temperatures show very little variation from those of last week.—G. J. SYMONS.

### COVENT GARDEN MARKET.—OCTOBER 8.

TRADE has been quiet with us the last few days, and prices have generally received a check.

#### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	6	2	6	Nectarines ....	dozen	4	0	12 0
Apricots.....	dozen	1	6	2	Oranges .....	100	4	0	12 0
Cherries.....	box	0	0	0	Fraises .....	dozen	4	0	16 0
Chestnuts.....	bushel	12	0	16 0	Pears, kitchen ..	dozen	0	0	0
Figs.....	dozen	1	6	8	dessert.....	dozen	2	0	4 0
Filberts.....	100	0	7	1	Pine Apples .....	100	3	0	6 0
Cobs.....	100	0	7	1	Plums .....	100	2	6	4 0
Gooseberries.....	100	0	0	0	Raspberries .....	100	0	0	0
Grapes, hothouse	100	1	6	4	Walnuts .....	bushel	14	0	16 0
Lemons.....	100	8	0	12 0	ditto .....	100	0	0	0
Melons.....	each	2	0	5 0					

## WEEKLY CALENDAR.

Day of Month	Day of Week	OCTOBER 16—22, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.		
16	TH	Valesnerius died, 1790.	59.0	40.1	49.5	6 37	5 4	7 49	4 54	1	14 30	289					
17	F		58.8	40.7	49.8	6 29	5 3	9 18	5 27	2	14 33	290					
18	S		60.4	40.7	50.5	6 31	5 0	10 44	6 12	3	14 44	291					
19	SUN	19 SUNDAY AFTER TRINITY.	59.4	41.7	50.5	6 32	4 58	11 56	7 13	4	14 55	292					
20	M		58.4	39.9	49.1	6 24	4 56	0 41	8 25	5	15 5	293					
21	TU		58.9	39.5	49.0	6 36	4 54	1 30	9 44	6	15 16	294					
22	W	Sir Roderick Murchison died, 1871.	59.0	42.4	50.6	6 28	4 52	1 58	11 3	7	15 24	295					

From observations taken near London during forty-three years, the average day temperature of the week is 59.1°; and its night temperature 40.6°.

## CULTIVATION OF THE MELON.



FOR many years I have practised with success a mode of growing Melons different from that recommended by some of the leading horticultural writers. I have been asked by some of the readers of the *Journal of Horticulture* to describe my system and its results. Though reluctant to enter the field as a writer on a matter that has been so largely discussed, I have thought that it can do no harm only to state my own experience.

Perhaps the principal feature of my system is in supplying the plants liberally with water at all stages of their growth, so as to keep them in perfect health and in a bearing state as long as possible; whereas the generality of writers recommend the withholding of water at the root and keeping a drier atmosphere as the fruit approaches maturity. By following the latter mode of culture the plants are stopped in their growth, wither up, and some even die before the first crop of fruit is ripe, and if they do not die they are worthless for further cropping. This drying-off system is practised with the idea that it imparts a superior flavour to the fruit. But taking a natural view of the subject, I cannot see how plants in a dying state can yield as good a flavour, or finish off the fruit to anything like the same perfection, as plants in a robust state of health.

It is long since I made up my mind that the drying-off system was a mistake, and the last eighteen years' experience has proved to my satisfaction I was correct in thinking so. I never allow the plants to suffer for want of water at any time, nor withhold syringing, no matter what state of ripeness the fruit is in, and I have seldom had cracked or a badly flavoured fruit. With plants grown in a house, and trained on a trellis and treated liberally, I have no difficulty in obtaining fruit for a long season in succession in the same way and with no more trouble than with Cucumbers. As the plants grow older they produce fruit more freely, and I find no difficulty in inducing the fruits to set and swell off. They set so freely that I have generally to thin them out, and it is seldom that there are less than from six to eight fruits on a plant all in different stages of growth at the same time. It is different when the plants are young and vigorous. Many of the first fruits after they set turn yellow and die, but after the first five or six have swelled off (if the plants are kept clean and healthy) they will then set and swell off as freely as Cucumbers, and bear fine fruit for a long time if properly attended to.

My experience is different with Melons grown in hotbeds, pits, and cold frames, and I cannot say the same of their bearing qualities, more especially when the vines are trained on the soil in which they are planted. For one thing, there is more difficulty in working amongst them; the lights have to be taken off every time attention is necessary, such as watering, syringing, and stopping shoots, which must be done when the weather is favourable; and in cold wet seasons like the present the stems are liable to decay when lying on the ground. With Melons grown in a house there is the

advantage of the plants being always under one's eye and easily attended to as regards stopping and regulating the shoots, fertilising the fruit, watering the borders, syringing, &c., at all times and in all kinds of weather.

Some cultivators rely more on the soil in which Melons are grown than they do on the general treatment of the plants. I feel certain that Melons can be grown, and grown well, in almost any kind of garden soil, if they receive a liberal supply of liquid manure and are otherwise properly attended to during the season. I have frequently grown Melons for two years in the same soil, and the produce of both years has been first-prize fruit at exhibition tables where there was great competition. I mention this to show that more depends on the general treatment than on any particular kind of soil producing good fruit. The soil here is a brown loam, which is apt to run together and crack when used by itself. To prevent it from cracking and make it porous I add one barrowful of decayed horse droppings and a little charcoal to every three barrowfuls of soil. After all has been thoroughly mixed together by frequent turnings it is trodden firmly and evenly in the bed where the Melons are to be grown.

Everyone who has had much experience in growing Melons knows how apt the plants are to decay close at the neck of the stem if the soil is at all damp, and how provoking it is to see the plants in a whole frame ruined before a fruit has been gathered. With the idea of protecting the necks of the plants and preventing decay I had collars made of the same material as flower pots, 10 inches in diameter, 2 inches deep, and 1 inch thick, to guard off water when watering the borders. The soil is raised a little higher than the rest of the bed, so as to allow of heavy waterings without the water coming in contact with the stems of the plants. After the plants have been planted and watered a first time the collars are placed over them and pressed firmly down on the soil, so that the bed can be freely watered when required without the water touching the stems of the plants, as the spaces inside the collars are never watered afterwards. In a short time the soil becomes as dry as powder, and I have never known a plant to rot at the neck since I adopted this plan.

The plants are allowed to grow to within 18 inches of the top of the trellis (which is some 7 feet) before they are stopped, and all the tendrils are taken off as they appear. The lateral shoots are stopped at the first leaf above the fruit, and the first female flower that appears is fertilised, and others as they appear are operated on in succession. When there are too many sets at first they are thinned out to five or six, and by the time that they have reached maturity there is no difficulty afterwards in keeping up a succession of fruit for months. The beds are watered regularly with liquid manure when required, and the surface of the bed is damped over, and the plants syringed every morning and evening to keep down red spider and encourage a robust growth, as previously stated, no matter what state of ripeness the fruit is in. I am still cutting good fruits from plants planted in a house in the beginning of April, which have been bearing heavily all summer. While I write (September 22nd) six plants are ripening five fruits each in different

stages of maturity ; while those which were much later planted in pots and frames are all gone some time since.—A. PETTIGREW, *Castle Gardens, Cardiff*.

### A PEEP AT THE PERENNIALS.

OUR perennials, being specially selected for late blooming, have not yet lost much in beauty, although October is come ; there are, indeed, many of the best things only just peeping out, and some have not shown colour. A few I fear, as *Aster grandiflora*, *Schizostylis coccinea*, and *Stokesia cyanea*, will be too late in this backward season to unfold their blooms at all. Colchicums are coming up fast. The Double White (*C. autumnale album plenum*) is especially beautiful, as spotless as a Tuberose and almost equal to it for a bridal bouquet ; indeed for those who do not like the somewhat heavy scent of the Tuberose this Double White Meadow Saffron would be preferable. Next in beauty, according to my estimation, is *C. byzantinum*, a single rose-coloured flower ; and then *C. speciosum*, a larger, newer, and rarer kind, of great beauty. I have also other single kinds, as *C. autumnale variegatum*, the flowers of which are beautifully spotted regularly all over with white ; and *C. autumnale striatum*, irregularly striped, not so pretty as variegatum ; and the double rose-coloured *C. autumnale plenum*. Autumn Crocuses are exceedingly pretty, and there are some beautiful colours among them which are not to be found in the Colchicums ; but they have this disadvantage—the rats and mice greedily devour the bulbs, while they know better than to touch the Colchicums. I know there are traps and poisons for rats, but unfortunately pheasants, too, are liable to be trapped and poisoned, and killing a pheasant is in some places I could name a greater crime than being without a Crocus. *Oenothera Youngii* is a little past its best, but still very beautiful ; it grows about 18 inches high, and has bright yellow flowers much in the way of *O. Fraseri*, but the foliage and habit of the plant have a lighter appearance than the last-named, and I prefer it to *O. Fraseri*. Last-autumn self-sown seedlings of both sorts are coming into flower, and I think it very probable they would make good bedding plants if treated as biennials. The Japan Anemones (hybrids japonica and Honorine Jobert) are of course in their best array, and unlike many of the herbaceous plants they look well in any position. In round beds about 4 feet across they are especially handsome, and for cutting are invaluable.

The scarlet *Monarda* (*M. didyma*) is over, but *M. mollis*, a lilac-coloured species of good habit, is just in its beauty ; and *M. purpurea* is still in flower. The *Monardas* all have a pleasant aromatic scent, and are (perhaps locally) known by the name of Bergamot. *Sedum Fabaria* is another well-known plant that will do in any position, excepting perhaps in very large masses, when I think it looks heavy. *S. Fabaria album* is a misnomer, having greenish flowers of no beauty. The season for *S. Warszewiczii*, a yellow species, is over ; but self-sown seedlings are now in full flower and are pretty. *Oenothera riparia*, of trailing habit, covers good patches near the edge with its bright yellow flowers ; and *O. speciosa* is a particularly handsome plant, from 18 inches to 2 feet high, with flowers nearly as large as *O. macrocarpa*, having yellow centre and veins on pure white ground, which afterwards changes to pink. *Polygonum Brunonis* is a trailing plant with beautiful pink spikes of flowers ; and *P. viviparum* is interesting from bearing living plants on the flower stems. *P. Sieboldii*, on the other hand, is a giant, and should not be in the perennial border proper ; it looks well on the grass by itself or in an open space between large shrubs ; it is a strictly herbaceous plant, grows 8 or 10 feet high and as much through. Another giant herbaceous plant is a variety of *Eupatorium purpureum*, which grows 11 or 12 feet high every season and has a majestic appearance. *Arundo Donax* grows nearly as high ; it ought perhaps not to be in the herbaceous border, but it looks well anywhere, and especially so when near water. The variegated variety I am happy to say withstood the ordeal of last winter without protection. It is planted in peaty soil near *Rhododendrons*, the roots of which no doubt tend to keep the soil dry and sweet. The ordinary Tiger Lily is over, but Fortune's variety is now in bloom, and is at least equal to the older one. *Lilium auratum* varies a good deal in its season of flowering, as well as colour. One plant, which has been out five years and has a spike 7 feet high, is only just expanding its first blooms, which are of a very large size. Another, planted about the same time, flowered in August, and was equally as large and good. They like peaty soil and dislike to be dis-

turbed ; while as to hardihood, a young bulb formed on the top of an old one was lying uncovered all last winter and is now growing freely. *Coreopsis præcox*, 4 feet high, bright yellow in colour, is very showy, is good for cutting, and takes care of itself, excepting as regards snails. Of *Tradescantia virginica* there are several varieties shading from blue and purple to pink ; I believe I have seen a white one, but I do not possess it.

*Eryngium*, blue Teasle-like plants, are all exceedingly beautiful, especially *E. amethystinum*. *Centrocarpha grandiflora* (or *Rudbeckia*) is 2½ feet high and as much through ; has large yellow flowers with black centres, some of which are close to the ground. This plant is more vigorous than most of the *Rudbeckias* ; it wants a good space to develop itself, and a position where it can be seen at least three parts of the way round. *Funkias* all have beautiful foliage. *F. Sieboldii* variegata is a good dwarf one with green and white stripes, almost equal to an *Aspidistra*, and *F. grandiflora* has large bluish flowers. *Cassia marylandica* is a tallish plant with handsome leaves and bright yellow flowers. *Crucianella stylosa* is a pink trailer which smells like a fox. *Lobelia syphilatica* in variety is handsome, and would probably take care of itself at the margin of a shrubbery, as its self-sown seedlings are now flowering in company with the parent plants. *Hyacinthus candicans* I will not attempt to describe, it wants a poet to do that ; it has been flowering for two months, and looks likely to continue as long as the weather permits. This was not planted out till spring this year, so I cannot of my own experience warrant it to stand the severest winters, but I hear it has done so in some places. As a precaution I shall cover one of my plants with ashes, and let the other take its chance. *Euphorbia myrsinites* is a dwarf spreading plant out of flower now, but its evergreen glaucous foliage is always handsome. *Statice latifolia* with beautiful large leaves and lavender-coloured flowers is now in full beauty, and so is *S. spathulata*, a miniature variety (or species). Amongst the Michaelmas Daisies are a great many weeds in botanical collections, but those I shall name are something very different to weeds. *Aster pendula* I think is as handsome as any I know, it is 3 feet high and nearly blue. *A. Amellus*, *A. amelloides*, and *A. Amellus bessarabicus* are a good deal alike, but vary in their time of flowering, and in their shades of purple, as well as having more or less yellow in the centre of the flower. They are all three about 18 inches high. *A. longifolius formosus* is fast expanding its bright pink flowers in great abundance ; this is also about 18 inches high and is extremely beautiful, but unfortunately the slugs are very fond of its young shoots in spring. *A. ericoides* is a graceful plant with numerous pretty small white flowers ; it grows 3 feet or more in height. Harrison's *Musk* is still in flower ; I should be glad to hear the experience of those who have tried this plant for bedding, as we are short of a dwarf yellow plant for this purpose. *Phygelius capensis* is not flowering as well as usual this year, it having been cut down close to the ground by the frost ; its scarlet spikes of flowers are ever welcome. Among other good things in flower now are the *Solidagos*, *Tritomas*, *Aconitum autumnale*, *Physostegia speciosa*, *Achillea Ageratum*, *Veronica virginica*, *Helianthus multiflorus*, *Pyranthrum uliginosum*, *Sylphium trifoliatum*, &c. *Lilium speciosum* and its varieties are not in flower yet, but they look very healthy.

—WILLIAM TAYLOR.

### HYDRANGEAS.

PINK and blue flowers on one *Hydrangea* plant, of which "J. W., Kent," sent you an instance of a week or two ago, is not unusual here. Many of the plants here at present are bearing six or eight hundred large heads of bloom, and trusses of blue, pink, and white may be seen on the same plant ; but in my opinion this does not look so well as a mass of blue or pink. The nature of the soil is said to rule the colour of the flowers. We have plants standing not 2 yards distant, the one producing deep blue flowers, the other bright pink. The soil in both cases is to all appearance the same. During last winter when the thermometer was repeatedly down to 10° we were much afraid our fine specimens of *Hydrangeas* would be injured as they were not protected, but they are finer this season than they have been for a long time.—J. MUIR, *Margam*.

GRAPES CRACKING.—I see by a paragraph in Mr. H. Weir's letter on "Grapes without Fire Heat," that he is troubled with Madresfield Court cracking do what he will. I have been much troubled by some kinds of Grapes cracking, and have tried



various means to cure the evil, but without much success, till my gardener this season, when the Grapes were fairly on the way to become ripe, tried cutting away from one-third to one-half the stalk for about an inch in length close to the point where the stalk starts from the Vine. This had the desired effect, the cracking was immediately stopped.—MADRESFIELD.

### AUTUMN FRUITS AND ROSES.

LITTLE, if any, fruit has ripened to perfection, and much has not reached maturity. Pears have failed most generally, except in exceptional situations or in very sheltered suburban gardens. Plums have been fairly plentiful; Apricots generally very scarce. On two trees, however, that had been kept netted late and long some twelve or fifteen dozen were gathered; from others not similarly protected two or three single fruits could hardly be obtained. But there were no glowing colours, no freckled cheeks, no real amber about the Apricots of this strange season; not a dish could be obtained for the table. We preserved them all as the best means of using them, giving them and all other fruits additional time to expel all unnecessary moisture by rapid boiling, in addition to the allowance of equal weight of sugar for fruit. On some old Apple trees there is a quantity of small fruit. On dwarf standards Cellini and King of the Pippins are the only varieties that have yielded, and every variety of fruit is at least a month late. A few Peaches of fair colour, though some are spotted and cracked, may be seen on our wall.

Visiting the vinery of a neighbour the other day we tasted a sweet and sugary Green Gage Plum of good flavour—one of many that had been for about three days in a temperature of from 65° to 70°. Some small Melons had done well, and a green Valencia was highly and delicately flavoured. In a small orchard house Peaches though perfectly pale had attained a great size. The gardener measured one for our satisfaction; it was 10½ inches in circumference and weighed 8 ozs., a Walburton Admirable.

Roses are nearly over. There is no real aftermath this autumn; but, spite of unhealthy shoots, spotted leaves, rusty foliage, and caterpillars here and there, Roses have done well, though they cannot bloom freely so late. Devonians is still lovely and abundant; Beauty of Waltham, Duke of Connaught, and many others besides La France, give me a fair supply for the smaller bouquets one has now to be content with. Wonderful has been the tenacity of the Tea Roses, and though only a novice in Rose-growing (my first trees were planted in 1873), I record my experience for the sake of others who may be tempted to decide too hastily that their Tea Roses have perished, as some notable contributors to the Journal have told us they did decide in the late disastrous spring. Then I, too, thought I had lost several of my collection. True some had utterly died, but several that I left in being to all appearance completely dead revived, and two or three of them are now fairly strong plants. One in particular—Karoline Kuster—that I pulled out of the ground showed a bud at the base. I carefully replaced it in April, and now it is just coming into healthy bloom. And now I am full of hope for the future. All the summer I have been working every spare inch of ground for more Roses, and now the catalogues are upon us, with their new and old lists. It is a little difficult to select where one would like to have many.

Fragrant and free-flowering varieties tempt me most, though form and colour are also irresistible. Still, I rather like two or three trees of known good hardy and free qualities, so as, since my space is small, to be sure of having late and early a good supply of favourite blooms.—A. M. B.

**PROPAGATING HEATHER.**—When at Glengarriff a fortnight since an American came up to a party of gentlemen and asked if anyone could inform him whether Heather would grow from seed, as they had no Heather in America, and it would be a great curiosity if he could introduce it, as no one seemed to know anything about the propagation of it. I answered him that if he had asked the question six weeks since I could not have answered it, but that I happened now to know for certain that it would grow from seed, as I had observed a large patch of young Heather growing in a sand quarry where none had ever been observed before. The seed had dropped from a stack of Heather, and the ground was now covered with plants, some of which were in bloom. As he did not know much about collecting the seed I went up the mountain, and in a short

time half filled my pocket with the ripe seed and dead flowers; and as the American was leaving the next day, I suppose by this time the seed is consigned to American soil. Heather makes a pretty edging to borders, and admits of being trimmed. Thanks to Mr. Luckhurst for reminding us it will grow from seed.—OBSERVER.

### POTATO CULTURE.

NEARLY half an acre of fertile sandy loam land was divided into two equal portions. One portion was planted wholly with Sutton's Magnum Bonum; some of the rows were 3 feet, others 2½ feet apart. The remaining portion was cropped at the same time with the following varieties in pretty equal proportions:—Dalmahoy, White Rock, Soden's Early Oxford, Sutton's Hundredfold Fluke, King of Potatoes, Snowflake, and Rivers' and Myatt's Ashleaf. Planting was completed before the end of March. The crops were raised in the first and second weeks in September with the following results:—The Magnum Bonum Potatoes were all but free from disease, several consecutive rows presenting not one specimen of a bad tuber. They were of good uniform size, with very few small tubers, and averaged from eight to twelve to the root. This is the third year that I have grown this valuable Potato and with a similar result, excepting that the produce is somewhat less this year than that of the two preceding.

With regard to the other varieties, grown as I have said, side by side and under precisely similar conditions, the crop of Rivers' and Myatt's Ashleaf are very satisfactory, with a very occasional specimen only of disease. King of Potatoes and Snowflake are diseased to a very serious extent, whilst Dalmahoy, White Rock, Soden's, and the Fluke are so extensively affected as hardly to pay for the cost of digging. Indeed, we are all of opinion that the yield of these latter is scarcely equal in amount to the seed that was planted.

Of the Magnum Bonums the yield in the rows planted 2½ feet apart was quite as good as in those 3 feet apart. A certain number of the rows of the Magnum Bonum and of Rivers' Ashleaf were earthed up in the usual way, but the greater number were, owing to the constant wet weather, not hoed at all. The only difference in the yield of the rows thus differently treated was, that certainly the largest Potatoes of Rivers' were in those rows that had not been earthed up. On this point I have sometimes been struck whilst watching the process of earthing, at seeing many of the underground shoots that bear the tubers ruthlessly cut off by the hoe. It is reasonable to infer that some of the early points which would have borne the largest Potatoes have been in this way sacrificed. However this may be, I should be inclined to make further experiments before concluding that earthing-up is necessary in all kinds of soil. The experience of some of your professional writers would be most valuable if they would kindly give it on this point.

Our experience this season in regard to the size of the tubers planted is also a little at variance with the usual recommendation. It so happened that the Rivers' Ashleaf Potatoes intended for seed found their way long ago into the kitchen, and the only tubers available for planting were those set apart for pigs, being about 1 or 1½ inch in length. "Plant them all, sir, they will do as well as any," said my gardener. And he was right. Some splendid Potatoes are the result; one now before me I measure as I write, it is 4½ inches long, 6¼ inches in circumference, and weighs 5 ozs. There are many still larger specimens.

I will only add, that owing I presume to the wet season, several of the plants of the different sorts bore tubers on the green stems. A tuber being merely an irregular dilatation of an underground stem this result is intelligible, especially in the general absence of light this summer; but I observed in every instance, I think, where these aerial Potatoes were formed none were to be found underground.—A SURREY PHYSICIAN.

### HOYA CARNOSA.

WITH what ornamental plant can I clothe the back wall of my vinery quickly? To this oft-repeated question I would always answer, *Hoya carnosa*. It is an evergreen, its foliage is handsome, its flowers perfectly lovely, its growth robust and free. It requires no border, a cubic foot of soil with plenty of drainage in a pot will suffice for a plant which has to cover an area of 300 square feet. Every shoot is self-supporting, putting forth roots and clinging to the wall just like Ivy. How can we feed these branch roots? They absorb moisture

from the bricks; the syringe must therefore be used freely throughout the season of growth, not using pure water, but weak, clarified, liquid manure—thus charging the wall with fertilising moisture that is neither offensive nor unsightly, and which tends wonderfully to promote the vigour of branch and foliage. My favourite agent for this purpose is Lawes' Grass manure, which dissolves so quickly that the water becomes clear as crystal in an hour or two after it is thrown into it. The Hoya blooms abundantly in the shade, a truss of about twenty flowers springing from the axil of every alternate pair of leaves all over the plant, for the truss stems never fall off but are persistent, and once formed continue to yield an annual crop of flowers, gradually becoming elongated, each circle of flowers leaving its impress so that the stems of old plants upwards of a dozen years old may be seen still going on bearing flowers as fine, fresh, and abundant as those on the young shoots. The velvety star-like white flowers, so exquisitely suffused with a delicate pink tint, embossed with a central star with five white waxy points and a minute central point projecting from a pencilled rosy crimson disk, each having a large transparent globe of liquid nectar suspended from its centre, and so sweet as to prove an irresistible attraction to the children, combine to form one of the most beautiful objects in the garden.

—EDWARD LUCKHURST.

### THE FIG.

I OBSERVE that an inquiry is made for information regarding the non-ripening of Figs upon a tree covered through the winter with young Figs. I give you the results of my own observations, and a mode of treatment by which I have gathered ripe Figs from a tree which, though planted many years and in vigorous health, had never previously ripened the abundant crop of young Figs with which it had been covered during the winter and spring. The tree is a standard tree, which is perhaps 20 feet high, but has evidently been partly cut down before I purchased the property at Budleigh Salterton, South Devon, where it grows. I go to this house only in July or August, and each year I observed that the young Figs appeared before I left, but the gardener told me that though the tree had been covered with them through the winter all of them fell off in the spring. I observed that soon after the first young Fig made its appearance a second smaller Fig appeared by its side. I knew that in its own country the Fig tree bears two crops of Figs. Speculating upon these facts I adopted the plan of rubbing off the first Figs before the appearance of the second. In about a week, as far as I have observed, after the destruction of the first Fig another Fig protruded close to the scar left by the removal of the first. The result has been that I now get ripe Figs, but in no great quantity, though the tree has been still through the winter laden with these second Figs. I do not know the name of this Fig, but it is of a russet colour outside and purplish within, and very fine in flavour. The Figs are very large, and I weighed ripe ones this year; one of 8½ ozs., another of 6 ozs. It appears to me that the explanation of the success of the above proceeding is, that as this particular kind of Fig is a very large one, if the first, which cannot ripen in the open air in England, drops off it leaves a scar so large that the attachment of the stalk of the second or riper Fig is so interfered with that its stalk perishes, and so the Fig drops off. It may be that the tree of your correspondent bears large Figs, and that my experience may be useful to him. If he succeeds by this plan it would be interesting to have the fact recorded in your columns.—SAMUEL CROMPTON.

### THE SYRIAN DESERT IN SPRING.

THE following extract, from Lady Anne Blunt's "Bedouins of the Euphrates," may interest your readers. The district spoken of, the Hamád, is due east of Damascus, and lies between latitudes 34° and 30°.—A. B.

"At this time of year (in February and early March) if the season is favourable the Hamád is one of the most beautiful sights in the world—a vast undulating plane of grass and flowers. The purple Stock, which predominates on the better soils, gives its colour to the whole country, and on it the camels feed, preferring it to all other food. The hollows are filled with the richest meadow grass, wild Barley, wild Oats, and wild Bye, the haunts of quails, while here and there deep beds of Blue Geranium (Bohattery) take their place, or tracts white with Camomiles. On the poorer soils the flowers are

not less gay; Tulips, Marigolds, Asters, Irises, and certain pink Wallflowers the most beautiful of all—cousins each of them to our garden plants. For it was from the desert doubtless that the Crusaders brought us many of those that we now consider essentially English flowers. Through this, as through a garden, the vast herds of camels with their attendant Bedouins move slowly all the spring; and the mares, starved during eight months of the year, foal, and grow fat upon a certain crisp grass which grows among the purple Stock, fine and dry and sweet as sugar."—(Page 166, vol. ii.)

### HARDY PLANTS AT THE EXPERIMENTAL GARDEN.

THE following plants, received at the garden last spring principally from Mr. Smith of Worcester and Mr. Ware of Tottenham, have proved very attractive and of easy management, and being free growers have become well established in a few months; most of them have been previously grown and tested by me in a different soil. It will be seen that the majority are simply varieties of our indigenous British plants, but are none the less valuable on that account.

*Achillea Ptarmica fl. pl.*—One of the prettiest and most perpetual-blooming hardy white flowers grown, and very useful for cutting; and if I were confined to growing six hardy herbaceous plants this would be one of them.

*Caltha palustris fl. pl.*—Both the large and small-flowered varieties have perfectly formed bright golden yellow flowers, the latter being dwarfer and preferable. Likes a cool soil.

*Dianthus barbatus magnificus* (double dwarf dark carmine Sweet William).—A bed of this in the Bedford Cemetery last year was for nearly three months a blaze of colour, and has this season been again the attraction of the place. It is easy of propagation, very free, and in all respects worthy of cultivation either for beds or borders; but sunshine best develops the brilliancy of its colour. One of the very best of the six.

*Erysimum Barbarea fl. pl.*—A very old-fashioned border flower. The double yellow Rocket does best in a cool but open situation.

*Geranium pratense fl. pl.*—Of this there are two varieties, one being fuller and of more perfect form, but not quite so bright in colour as the other; the first being greatly preferred, however, by me. It lasts a long time in bloom, will grow anywhere, but likes a cool situation best. I should place it in the foremost of the six.

*Lotus corniculatus fl. pl.*—This when grown *en masse* is a most striking, dwarf, summer-flowering plant; is at home on a dry bank, and does well on the sunny side of a rockery.

*Pyrethrum (Chrysanthemum) uliginosum.*—This is a tall-growing hardy Composite of the Reine Marguerite type, producing very freely in late autumn flowers with white rays and yellow discs almost as large as a good size Dahlia. Most striking at this season, and very suitable for the back of a border or shrubbery. Should be more grown.

*Salvia pratensis lupinoides.*—One of the prettiest of all the Salvias, having purple and white labiate flowers freely produced.

*Spiraea Filipendula fl. pl.*—I should select this as another of the best six hardy herbaceous plants, as it is very pretty, dwarf, free, and easily propagated. Does best in a dryish situation.

*Spiraea Ulmaria fl. pl.*—Almost equal to the last, but is taller and likes a moist soil. The flowers are also scented, but not quite so much so as the single variety.

*Trollius Fortunei fl. pl.*—I know of no flower of its exact colour, as it reminds one a good deal of the setting sun. It is the prettiest of the tribe.

One of the best hardy annuals I have grown is the fine double variety of the common pot Marigold, called Le Proust. The flowers are very perfectly formed and of a curious buff colour, with petals tipped brown and streaked orange and bright yellow, and will of course grow anywhere.—T. LAXTON, Bedford.

BLACK ALICANTE GRAPE FAILING IN A COOL HOUSE.—We have tried this variety of Grape in a cool house for the last three years. Each season it has produced plenty of bunches, but the berries have never set or become larger than peas when ripe, although the bunches were well shaken and brushed with rabbit tails when in bloom. Lady Downe's, Hamburgs, &c., have not shown this failing in the same house. I therefore think the Alicante is not a suitable Grape

to plant in cool houses in all cases. We have lately inarched Pearson's Golden Queen on all our Alicantes, and we expect better results from it.—A KITCHEN GARDENER.

### PORCHESTER, ITS CASTLE AND ITS POSY GARDENS.

PERHAPS many of my readers know South Hants, and particularly Portsmouth. On the landward side of its renowned harbour the visitor cannot help seeing a wide-spreading Castle, "a noble wreck in ruinous perfection," with a good belt of trees around it, forming a green setting to its grey walls and towers. But one tower is so much larger than the rest that it at once attracts and fixes your attention. A large, high, massive tower it is. There it stands, "four-square to every wind that blows;" and there it has stood. How long shall we say? Well, I hardly know; but we do know that Porchester Castle existed in the time of the Romans, and from its seaward gate probably embarked the legion for the siege of Jerusalem. We do know the Castle was first a Roman, and then in succession a Saxon, Norman, and English fortress, and a prison for the French taken in the Napoleon wars. I was desirous of seeing Porchester town and examining its Castle for a special reason, for I learn that the former has one marked and peculiar industry—the cultivation of nosegay flowers, supplied in vast numbers to the dwellers in Portsmouth and tourists. Having obtained a general view from Fort Southwick I descend and visit Porchester lying beneath. The town is not striking to a stranger's eye; it is low-lying and straggling. One thing attracted my notice, that is the great proportion of flowers in the cottage gardens. But like all strangers I must hurry on and see the Castle. Fortunately I have a fine day—a break in the bad weather; a brief one it proved, in this summer suitable for the growth of Ivy and slugs, but not suitable for flowers and fruit and sight-seeing. It is autumn, but had it been spring I am told that the old Castle walls would have been ablaze with Wallflowers growing abundantly and unchecked. I enter by the land port or western tower, and learn that the walls of the Castle enclose a space of over eight acres; and I can well believe it, for the greensward within is wide and large. In the further part to the right is the church. The space inside the Castle looks like a square flat field, in which cattle calmly graze. Porchester Castle is now a great place for excursionists. Vast are the remains. There is the Norman court, the citadel, banquet hall, Queen Elizabeth's tower, and other towers; but the eye still is most caught by the great Saxon tower, roofed in, with storey above storey gained by flights of stairs. In all there are in it fourteen rooms. This was the principal prison in the war time, and in the Castle were confined during the French wars as many as eight thousand men.

I look into the church, a fine Norman building in the form of a cross, but one arm of which, the south transept, has long since yielded to time and decay. I leave the Castle in search for what I may call the principal posy garden of the place. It belongs to Mr. Martell, who shows me some of the posies or nosegays which are ready for sale—good-sized nosegays they are of the flowers now in season. There is one peculiarity in their make-up: instead of an edging of white paper, formal-looking and artificial, all Porchester posies have an edge formed of Box or other evergreen. This looks so unartificial; and, besides, green always gladdens the eyes. During the year thousands of excursionists visit Porchester Castle and purchase nosegays. But besides the sale of posies to excursionists there is a regular demand for flowers in this form in Portsmouth. This is well, for flowers brighten up sad and sick rooms; they cheer and solace; they make the little town parlour, often stiff and tasteless in its furniture arrangement, bright and cheerful. Porchester posy gardens do much good, then, in a quiet unobtrusive way; so we will re-echo Kit Marlow's words, written though they were over three hundred years ago—

"I will make thee beds of Roses,  
And a thousand fragrant posies."

I am taken by Mr. Martell into his nursery garden—unique in its way, everything being cultivated for a special purpose. His object, he told me, was to have a quick succession of flowers throughout the year to make up into nosegays; all suitable, but unsuitable ones are discarded. The size of the ground thus cultivated is eight acres, of which one acre is devoted solely to Pansies. Here, too, were large beds of Pinks, Anemones, Carnations, Phloxes, and many other flowers, all to come in their season, and seldom enough flowers are to be had. Hence every cottage garden is a bunch of flowers. The

old Castle brings the demand in a great measure, and Porchester taxes itself to create the supply. There is a great demand for old China Roses, so Mr. Martell has an outer garden given up solely to them. Flowers here are literally the staff of life; every garden is full of them, and the object of all is to get more and more. Poor children are brought up to tend and take care of the flowers. It is not with them as with the girl in Tom Hood's poem—

"Poor Peggy hawks nosegays from street to street,  
Till—think of that, ye who find life so sweet—  
She hates the smell of Roses."

No! for the Porchester Peggies love their smell, as it leads to bread and butter.

Mr. Martell is carefully cultivating a white Polyanthus with yellow eye, which is not yet in trade, and which he believes that he alone possesses. His garden is not one easy to forget from its peculiarity. Here are old-fashioned flowers in abundance, such as Sweet Williams, and Daisies, and Stocks—everything suitable for the nosegay. Upon my mentioning my interest in fruits Mr. Martell told me that he knew those whose Cherry trees realised usually £40, had only 9s. worth on them this year. He also said that in his part of the country the Black Diamond Plum had stood the wet better than any other. Thus gathering information I wander through this peculiar but interesting nursery, this posy garden so curiously connected with Porchester's ancient Castle.—WILTSHIRE RECTOR.

### STRAWBERRY CULTURE.

I DO not wish to enter into the discussion in previous issues on Strawberry forcing, though I have read the different opinions that have been expressed; but I will observe that to be successful in Strawberry forcing we must from the commencement never lose an opportunity of improving the plants. If we were to work with the same enthusiasm with plants for outdoor quarters as we do in the case of plants for forcing we should have much better than the usual results. As a rule, where plantations of young Strawberries are made in autumn no fruit is expected therefrom till the second summer after, where no forced plants are made use of. By selecting runners for fresh plantations in the same way as for pot work—working against time, having the plants early established—a good stroke of work would thus be done. A few years ago in a fresh quarter, which I had planted late in autumn, the succeeding summer I found by the foliage some varieties were mixed; this not being satisfactory I pulled out the plants not required and transplanted some early established runners. The succeeding year the latter all bore a good crop. A few weeks ago I had a fresh plantation made, which was the first opportunity I had. Every plant was lifted with a ball of earth; through this they never flagged a leaf. I eventually gave them a watering with liquid manure. The stronger plants have been throwing out runners for some time past, which I had picked off; and if I do not have a good crop next year I feel satisfied I shall lose nothing by having taken the first chance in planting.—M. A.

It is a practice in many gardens after the fruit is gathered from the Strawberries to clear away any weeds that have sprung up, and to divest from the permanent plants all runners after the stock for forcing has been layered and the necessary quantity for fresh plantations has been obtained. This practice we adopt and recommend. Where useless runners are allowed to remain until late in the season before being removed they rob the parent plants considerably, and exclude valuable light from the crowns of those intended to produce a crop the following year. Another system we have seen practised is, after the fruit has been gathered a line is laid down, and a man commences with his spade and chops off a large portion of the leaves, the runners as well. This system, we think, cannot be too strongly condemned. Much more harm results from it than allowing the runners and all to grow together until the Strawberry is thoroughly at rest. How can plants develop plump and prominent crowns when divested of their foliage when in full growth? The Strawberry, like all other plants, will ripen its own foliage, and can then be cleared off without practising the unnatural system alluded to when the foliage is immature.—SCIENTIA.

WELLINGTONIA GIGANTEA.—It may interest Mr. Campbell (page 272) to know that none of the Wellingtonias here are so tall as the highest at Muckcross, but some of them are more in

girth, the largest measuring 10 feet 9 inches round 18 inches from the ground. This tree is only about 40 feet high, and some of the cones are in clusters of two dozen or more. Are they usually produced in this manner?—J. MUIR, *Margam*.

#### ABOUT LIVERPOOL.—No. 5.

##### WHINCOTE.

BEFORE noticing the undermentioned gardens it is necessary to correct a printer's error that ought not to have been made nor passed, in the notes on Mr. McIver's gardens last week. Mr. Tunnington, not "Dunnington" as printed, is the skilful manager of those gardens. Equally skilful as a gardener, but his charge is much less extensive, is Mr. Mease, gardener to C. W. Neumann, Esq., Whincote. This garden though small is evidently cherished by its owner, and better "all round" practice is not often seen than in this varied interesting enclosure. Besides the formal modern flower garden, which was effectively planted, there is a section devoted to hardy herbaceous plants, which being select, well cultivated and attended to, constituted the most attractive portion of the ground. *Potentillas* in choice variety, *Iris*es of the *Kämpferi* section, *Dianthus*es, *Delphiniums*, *Campanulas*, and various other border flowers tastefully blended, produced an effect as rich as it was pleasing. The conservatory was also very gay, the most notable plant being *Lapageria alba* trained to the roof and bearing five hundred flowers—a charming sight. Rock and alpine plants are also represented in suitable positions, and the large, undulated, and excellently kept lawn "set off" the flowers to great advantage.

Under glass the practice is equally good. Not an unhealthy or unrepresentable plant is to be seen, while not a few of the specimens are worthy of a place at any exhibition. Some of them won high honours at the Liverpool Show, which was certainly one of the best exhibitions of the year, and were alluded to in the report on page 106. Others, smaller because of more recent introduction, are represented in the best health and colour. Quite as noteworthy as the plants are, or were, the *Grapes*. The house of *Muscats* was one of the finest in the district, the bunches large, well formed, and full, with fine berries of excellent finish. Thinly disposed spurs, ample and fully developed foliage, with heavy top-dressings of rich manure on the borders, are the leading points of culture which have produced such highly creditable results. The top-dressing was a mass of active roots, which were copiously supplied with liquid manure, and the healthy foliage and grand bunches overhead told how greatly the Vines enjoyed this generous fare. Peaches are extensively and well grown under glass, and outside the *Chrysanthemums* by their sturdiness and generally good condition gave promise of fine blooms. Each plant is limited to three stems, which were strong without being excessively exuberant, experience having proved that over-luxuriance is productive of coarse blooms.

Such is a very brief outline of this garden, which is well worthy of a visit, and of recognition, on account of the excellence of the practice in every department.

##### WOOLTON HALL.

In few places "about Liverpool" is gardening conducted in a more spirited manner than in this, the establishment of J. R. Leyland, Esq. The mansion is surrounded with extensive lawns and noble trees, and herbaceous plants are largely grown in borders at the front of the shrubberies. A panelled flower garden is formed near the conservatory, which adjoins the mansion, and the massing of flowering plants and carpet beds is well carried out. The two central beds in the designs were planted with the fine old *Salvia patens*, which enjoyed the wet cool summer, flowered with great profusion, and was both elegant and rich. It is not necessary to dwell on the contents of the conservatory, because all such well-furnished structures contain much the same class of plants at the various seasons of the year; but it may be useful to state that the wall of the corridor connecting the building with the mansion is covered with *Cissus atlantica*, which is never injured by the gas that is regularly burned there, and from the effects of which most other plants suffer considerably.

It is, however, the newly erected glass structures that constitute the great feature of the gardens. The houses are extensive, and some of them exceptionally large. They have all been planned by and erected under the immediate superintendence of Mr. Faulkner the gardener. Span-roofed houses are provided for stove and greenhouse plants and Orchids, of

which good collections are being formed and well grown; pits for Pines, Melons, &c.; and splendid vineries, half-span, the front rafters being 22 feet in length. The Vines are in their second year, and are extremely strong. All the leading varieties are planted, and grand *Grapes* ought to be produced in due time. The strong shelves along the back of the range contain boxes planted with *Tomatoes*, which are trained up the shorter north roof and produce heavy crops. Herbaceous borders are formed alongside the walks in the kitchen garden, and all requisite conveniences are being provided for forming a very complete garden. In a large square enclosure are frames and *Chrysanthemums*. Six hundred of these plants are grown, including all the best varieties in cultivation; and if Mr. Faulkner enters the exhibition lists this autumn he ought to be a very formidable competitor. The plants were in excellent health, and were evidently receiving that good attention that is bestowed on everything in the establishment.—J. W.

##### ROCK ROSES.

MANY species and varieties of the large genus *Helianthemum* possess sufficient attractions to render them worthy of more attention than they generally receive for planting in a variety of positions in the garden. The fugaciousness of their flowers is their chief failing, and doubtless that to a great extent prevents their being more appreciated; but although the flowers are of short duration individually, they are produced in abundance, and the colours are bright and varied. Most of the species are dwarf, erect, or trailing shrubs, and require a somewhat sandy or light soil. They succeed well on an ordinary rockery in nooks where more delicate plants would not thrive. They may also be planted in the mixed border or on banks, or in fact in any position where the soil is not too heavy. The popular name Rock Roses has been bestowed upon them because, owing to their five petals and numerous stamens, they bear some resemblance to the single wild *Roses*.

The best of the varieties and species are the following:—*H. vulgare venustum*, flowers small, of a peculiar bright crimson-scarlet colour, stamens yellow; very effective in dense masses. *H. v. macranthum*, flowers white with a yellowish tinge, very abundant. *H. v. serpyllifolium*, leaves small, bright green and smooth; flowers pale yellow. *H. v. roseum*, a compact little plant with numerous pretty rose-coloured flowers. *H. v. sulphureum*, flowers most profusely produced of a fine pale sulphur colour. *H. v. Lucy*, leaves dark green; flowers semi-double, purplish pink. *H. libanotis*, long linear dark green leaves, flowers small, yellow; a very distinct and old species. *H. rugosum*, a small trailing shrub, flowers bright yellow with a dark maroon centre; attractive and pretty. *H. polifolium*, downy leaves, white flowers, and yellow stamens, very pretty; this is a British species. There are, in addition to those enumerated, several very good double forms of *H. vulgare* that are bright and rather more durable than the single varieties.—L. C.

##### PROPAGATING NEPENTHES—MATLOCK SPAR.

In your last week's issue I notice an inquiry by "YOUNG GARDENER" as to the best means of propagating *Nepenthes*. I have found cuttings of those plants to root most freely when taken off with a good leaf attached, inserted in "Matlock spar," and afforded a brisk bottom heat.

The spar I use for the purpose is of the kind so largely employed in this neighbourhood for surfacing the asphalt footpaths to give them a whitish appearance, and which has been crushed to the size of Peas. I find that most plants root very freely in that material. The cuttings of *Crotons* root and grow remarkably quickly if inserted in it, and I have seen leaves of the same without any wood attached that have lain for a short time upon it, throw out roots into it in the same manner as a *Begonia* or *Gloxinia* root would do. I have found a number of plants which are usually considered as being difficult to propagate, such as the new *Aralias*, *Reidias*, *Terminalias*, and *Pavettas*, root most freely in this material if they are kept close and a moderately brisk bottom heat is maintained.—W. K. WOODCOCK, *The Gardens, Thornbury, Sheffield*.

PEA R. GILBERT.—This blue wrinkled Pea, received at the Experimental Garden from Mr. Gilbert, has proved a very fine and productive late or late main crop variety. In addition to its other good qualities I can testify to its excellent flavour, and I anticipate it will be long-bearing. In height it has not ex-

ceeded 3 feet—a great advantage in a season like this, when many varieties have grown quite out of reach, and it has been almost impossible to find sticks tall enough. In several instances here the ordinary 6 feet Peas sown 6 feet apart and staked proportionately have quite filled the intervening spaces.—T. LAXTON.

### THE BEDDING AT THE CRYSTAL PALACE.

OWING to the elevated and exposed position which the park and gardens at Sydenham occupy, the sunless and rainy season has severely affected the flowering plants that usually produce such a brilliant display. The beds in the Italian garden bore a very dull appearance, the only plants there that had any approach to brightness being the Calceolarias (var. Golden Gem), which have flowered profusely, and they still continue very effective. Several of the beds have been planted with carpet designs that would no doubt have been very pleasing under favourable conditions, for the designs are elegant, but the plants have not well filled up their allotted space, consequently giving a somewhat patchy appearance. But these remarks will not apply to the Dahlias near the roseroy, for although the growth has been somewhat stunted and the flowers are perhaps not quite so fine individually, yet they are very abundant, and their colours extremely clear and bright. The large circular beds which these plants occupy are uncommonly attractive; most of the best varieties are represented, including numerous shades of pink, crimson, scarlet, and white. One large bed of irregular form near the above was particularly noticeable; it was planted with variously tinted Phloxes, dwarf Sunflowers, numerous brightly coloured Dahlias, the glowing Tritoma Uvula, and a few Hollyhocks intermixed, and a more pleasing, cheerful, and effective combination of colours, especially when viewed from a distance, could scarcely be imagined.

Around the roseroy the beds present a rather better appearance than they do in the Italian garden, partly because the majority are carpet beds, and the plants most freely employed are *Mentha Pulegium gibraltarica*, *Herniaria glabra*, and Golden Feverfew, all of which are in a measure independent of the weather. The designs, too, are of a simple character; and that is an important point, for an intricate device never looks well unless clearly defined and filled out, and in a season like the present has been that is almost impossible. On the lower portion of the slopes two circles are very pretty, planted with variegated Gazanias intermixed with Lobelias in one, and in the other with Iresine Lindeni, the contrast of the orange flowers and variegated foliage of the Gazanias with the dark-leaved Iresine and blue-flowered Lobelias being especially pleasing. The border immediately surrounding the Ivy-covered arches is planted with triangles of Pelargonium Bonfire and Christine alternately, margined with lines of Pelargonium Golden Superb Nosegay, Iresine Lindeni, and Pyrethrum, with central alternate squares of Tagetes and Centaureas, the outer edge being formed of Lobelias and Echeverias. Viewed from the lower walk this border has an agreeable appearance.

The general aspect of the park and lawns is extremely good; the shrubs and trees have made abundant growth, and the well-kept turf is as close and fresh as could be desired. Near the central walk we noticed a novel and yet excellent combination of plants in a large bed. The centre was occupied with Phloxes, Sedum spectabile, Retinosporas, variegated Maples, Aralias, &c., intermixed and edged with small Retinosporas and Euonymus radicans variegatus. This is an idea that might be carried out with effect in many other places.—L. CASTLE.

### PORTRAITS OF NEW AND NOTABLE PLANTS.

**GERANIUM ATLANTICUM.** *Nat. ord.*, Geraniaceae.—“*G. atlanticum* is a native of Algiers, where it was found in rocky places, near Constantine by Boissier, on the banks of the Chiffa by Munby, on the peak of Mérid by Choulette, and in Oak forests near Blidah by Lefebvre. A perennial herb, clothed with rather appressed silky hairs, eglandular; rootstock a small woody tuber with dark-brown bark.”—(*Bot. Mag.*, t. 8452.)

**CHIONODOXA NANA.** *Nat. ord.*, Liliaceae.—“A native of the mountains of Crete, at an altitude of 5000 or 6000 feet above sea level, flowering in the neighbourhood of the melting snow in May, and consequently perfectly hardy in our English gardens. It was discovered by Sieber, an Austrian traveller, who collected plants largely in the island about the year 1820, and who confounded it with the Caucasian *Puschkinia scilloides*, and figured it under that name in his published travels.

For horticultural purposes it is far inferior to *C. Lucilæ* (*Bot. Mag.*, tab. 6433), the flower being much smaller, and the whole habit of the plant more slender.”—(*Ibid.*, t. 8453.)

**PSYCHOTRIA JASMINIFLORA.** *Nat. ord.*, Rubiaceae.—“*P. jasminiflora* was discovered by Libon in the province of St. Catherine, in South Brazil, in 1860, and introduced by Mr. Linden.”—(*Ibid.*, t. 8454.)

**ODONTOGLOSSUM MACULATUM.** *Nat. ord.*, Orchideae.—Native of Mexico.—“Of the genus twelve species are known, including some of the finest, which are yet to be introduced into cultivation. *O. maculatum* has been long cultivated at Kew, and flowers freely in June.”—(*Ibid.*, t. 8455.)

**VERONICA LYALLII.** *Nat. ord.*, Scrophulariaceae.—“It inhabits both the larger islands of New Zealand at elevations of 2000 feet and upwards; and we have specimens which cannot be distinguished specifically in a dry state, gathered by Colenso on rocky cliffs at Patea, and from the top of the Ruahine mountains. *V. Lyallii* was raised from seed by Mr. Isaac Anderson-Henry, F.S.A., and flowered with him in May of the present year for the first time. It is a slender suberect or creeping branching plant, glabrous or with the stem pubescent; branches rather woody, prostrate and rooting or ascending.”—(*Ibid.*, t. 8456.)

**ARISEMA GALEATUM.** *Nat. ord.*, Aroidae.—“It is a native of Sikkim, from whence tubers were sent to Kew by Mr. Gammie, through Dr. King of the Calcutta Botanic Gardens. It flowered in Kew in May of the present year, as it also did in the gardens of the Royal Horticultural Society, Chiswick.”—(*Ibid.*, t. 8457.)

### ROYAL HORTICULTURAL SOCIETY.

OCTOBER 14TH.

THE exhibits at this meeting were both numerous and good, and many visitors were most agreeably surprised. In the vestibule Messrs. Charles Lee & Son exhibited a fine and tastefully arranged collection of Conifers, Euonymuses, and other hardy ornamental shrubs similar to that of last year, and for which a gold medal was awarded. The exhibition will continue until the 24th inst. Near the entrance were Messrs. Lane's magnificent Vines in pots, which attracted considerable attention. In the Council-room were arranged the various collections of plants, those from Messrs. Veitch, Williams, and Bull being especially noticeable; also the extensive collections of fruit from Messrs. Veitch, Paul, Wildsmith, and Goodacre.

**FRUIT COMMITTEE.**—H. Webb, Esq., in the chair. The collections of fruit were numerous and good, the large collections of Apples and Pears from Messrs. Veitch and Paul being especially remarkable. Grapes and Pines were also in fine condition. Mr. C. Ross, gardener to C. Byre, Esq., Welford Park, Newbury, exhibited five handsome well-ripened Smooth Cayenne Pine Apples, weighing respectively 8 lbs. 14½ ozs., 6 lbs. 5 ozs., 5 lbs. 11½ ozs., 5 lbs. 10 ozs., and 5 lbs. 5 ozs. A cultural commendation and bronze medal were awarded. Mr. W. Allen, gardener to Lord Suffield, Gunton Park, Norwich, exhibited two fine bunches of Muscat of Alexandria Grape, weighing together 10 lbs., the berries large and well ripened. A bronze medal was awarded. He also sent a seedling, the result of a cross between Syrian and Alicante. Two bunches were shown, one the produce of a Vine inarched on Lady Downe's and the other from a Vine on its own roots; the bunch is long and the berry oval. The Committee considered it distinct, but desired to see it later in the year. Mr. Goodacre, Elvaston Castle, Derby, sent twenty-five bunches of Grapes in twelve varieties. The following were very good—Alicante, Barbarossa, Mrs. Pince, and Gros Colman. For this fine collection a silver Knightian medal was awarded.

Mr. Wildsmith, gardener to Viscount Eversley, Heckfield Place, Winchester, sent twenty-two bunches of Grapes in ten varieties, including Lady Downe's, Trebbiano, Black Hamburg, and Alicante well finished. This was also an excellent collection, and a similar award was granted. Messrs. Osborn & Sons, Fulham, exhibited a number of small plants of their new variety of Fig, Osborn's Prolific, which well deserves its name; but nothing was awarded, as the fruit was not ripe. Mr. J. Walker sent a fine dish of Pond's Seedling Plum well ripened, also a dish of Red Currants, for which a vote of thanks was accorded. Messrs. Veitch and Sons of Chelsea exhibited ninety-five dishes of Apples in good condition for the season. They had been borne by trees growing in the Southfield Nurseries, Fulham. The collection included all the best varieties, and a silver Knightian medal was awarded for them. Messrs. Wm. Paul & Sons, Waltham Cross, also staged a large collection of Apples and Pears, comprising a hundred dishes. The Pears were generally unripe. A bronze Knightian medal was awarded.

Messrs. H. Lane & Son, Great Berkhamstead, exhibited a large collection of Grapes, most of which were in fine condition, but their Vines in pots were most excellent. Six Vines were shown,



all bearing a large quantity of fruit, and generally well ripened and coloured. Foster's Seedling had twenty-eight, twenty-seven, and twenty-six bunches; Black Hamburg fifteen and sixteen good bunches; and Alicante fourteen bunches. For this superb collection a gold medal was deservedly awarded. Mr. J. Perkins, gardener, Thornton Hall, Eye, Sussex, sent a seedling Melon named The Squire, fairly well netted. Mr. D. Beesley, gardener to R. P. Coleman, Esq., Spilsby, sent a brace of Cucumbers named the Improved Manchester Prize of good strain: this was commended. Mr. J. Pond of Jersey exhibited two seedling Shallots, one the Jersey Lily, and the other the Jersey Giant Red. They are to be tried at Chiswick. Herr Ernest Benary of Erfurt was awarded a first-class certificate for a purple-top Turnip named Early Munich, which has been tried at Chiswick and found to be three weeks earlier than other varieties. A vote of thanks was accorded to Mr. Eads of The Cedars, Northampton, for a dish of Suttons' Giant White Runner Beans in good condition.

**FLORAL COMMITTEE.**—Dr. Denny in the chair. The duties of the Committee were by no means light on this occasion, for very numerous collections of plants were staged. From Messrs. Veitch and Sons, Chelsea, came an excellent collection of new and rare Orchids and other plants, which included the following:—*Miltonia Moreletiana* superba, with large flowers, sepals and petals deep purple, labellum light purple with darker veins—very pretty; a specimen of *Ceologyne Massangeana*, bearing a large spike of very pale yellow flowers, the labellum being marked with dark streaks inside; *Oncidium ornithorhynchum* album, bearing a slender branching spike of small white flowers, with a yellow crest in the centre of the labellum; *Oncidium dasyle*, a curious little species with small flowers, labellum yellowish with a dark protuberance near the base, and the sepals spotted with chocolate. A first-class certificate was awarded. A peculiar Orchid, *Mormodes Ocanne*, flowers borne in spikes, thickly spotted with reddish brown; and *Lilium auratum rubrum vittatum*, a variety with crimson purple streaks down the perianth divisions. *Pachystoma Thompsonii*, an attractive Orchid; sepals and petals white, narrow; labellum with narrow recurved portion of a purple lake colour; flowers in pairs on slender peduncles. A first-class certificate was awarded for this and the following:—*Cypripedium Spicarianum*, flowers small, petals and labellum of a greenish colour, the posterior sepal white marked with purple; a pretty and distinct species. This group was not very large, but of great interest.

Mr. B. S. Williams, Upper Holloway, obtained a silver Banksian medal for a large and most interesting group of plants, comprising numerous excellent Orchids, Crotons, Nepenthes, &c., the front line being formed of the extremely attractive little Orchid *Pleione lagenaria* in 48-pots, each plant bearing about eight flowers. Some of the most noteworthy Orchids were the following:—*Vanda cœrulea* had two large spikes of pale bluish white flowers; *Dendrobium superbiens* was bearing a large spike of bright purple lake flowers with twisted sepals; the showy *Odontoglossum grande*, with six large flowers; *Dendrobium bigibbum*, a lovely Australian species with neat little bright purple flowers in long slender spikes; *Maxillaria nigrescens*, a species with peculiar brownish-coloured flowers, narrow acute sepals and petals; the attractive *Oncidium tigrinum* was bearing a long spike of flowers with large yellow labellums and narrow sepals and petals marked with chocolate bars and spots. Among other plants were the hybrid *Nepenthes* N. Ostramiana, obtained from a cross between N. Sedeni and N. Hookeri; the pitchers are freely produced, of medium size and thickly marked with red. A first-class certificate was awarded for it. A good specimen of the narrow-leaved *Croton Rodeckiana*, excellently coloured, was also exhibited. The group was backed up with *Katakidomama Hopei*, *Panax excoelsum compacta*, *Hyphorbe excoelsum*, and the following, for each of which first-class certificates were awarded:—*Coccos elegantissimus*, a very graceful species with slender drooping bright green leaves; and *Calanum densum*, a distinct and handsome plant.

Mr. W. Bull, Chelsea, was accorded a vote of thanks for a number of new and rare plants, of which the most noticeable were the following:—*Tillandsia Lindenii* genuina, with fine purple flowers on a broad flattened spike; *Masdevallia velifera*, small flowers of a curious yellowish brown tinge; *Cynochas Warsowiczii*, an extraordinary Orchid, one of Mr. Bull's recent introductions. The flowers have no beauty whatever in a horticultural point of view, as they are of a pale green colour, but they are interesting from being of two very different forms. One form is 2 or 3 inches in diameter, with ovate sepals and petals and a heart-shaped labellum, and are borne on a short stiff spike. The other form is small, with a peculiar stalked filamentous labellum, and the flowers are borne on a long pendulous spike. A botanical certificate was awarded for this peculiar plant. That very fine *Oncidium varicosum* with a dense panicle of its bright yellow flowers, *Bolles caelestis*, *Oncidium ornithorhynchum*, *O. macranthum*, and *Pleione lagenaria* were also in good condition. A first-class certificate was awarded for *Adiantum mundulum*, an elegant little compact Maidenhair Fern with bipinnate fronds; and similar awards were granted to *Polystichum lentum*, a pretty Fern with bright green pinnate fronds, the pinnae being deeply serrate; and *Adiantum cuneatum dissectum*, a variety with deeply cut pinnules.

Several early-flowering *Chrysanthemums* of considerable merit were also exhibited, notably the yellow *Præcocitæ*.

Mr. John Wills exhibited the distinct new Fern *Adiantum Bausei*, which is supposed to be a hybrid between *A. trapeziforme* and *A. decorum*, and was raised by Mr. Bause, the energetic manager of Mr. Wills' nursery at Anerley. The fronds have a most elegant drooping habit; the pinnules are large and bright green, and being also pendulous they cause the plant to appear almost as though it was flagging. Mr. G. King, gardener to G. Simpson, Esq., Wray Park, Reigate, sent a number of seedling *Coleuses*, one being especially bright—viz., *majestica*, with acute leaves, crimson in the centre and margined with yellow. For this a first-class certificate was awarded. Mr. Charles Noble, Bagshot, sent his dwarf Rose—Queen of the Bedders, with dark crimson flowers very freely produced. Mr. C. Green, gardener to Sir G. Macleay, Bletchingley, was accorded a vote of thanks for a specimen of *Brunsvigia Josephine*, with an enormous number of red flowers; and a first-class certificate for *Passiflora Hahnii*, a neat whitish flower with ovate leaves, velvety green above and purple underneath. Messrs. Rawlings Brothers of Romford contributed a collection of Dahlias, that was highly commended, including many seedlings of great merit. Mr. H. Cannell, Swanley, staged collections of Dahlias, Pelargoniums, and early-flowering *Chrysanthemums*, and deservedly obtained a bronze Banksian medal.

A cultural commendation was awarded to Mr. J. Walker, nurseryman, Thame, Oxon, for a quantity of cut flowers of the fine hardy climber *Tropæolum tuberosum*, which continues blooming for several months during summer and autumn. Mr. C. Turner, Slough, exhibited cut flowers of a fine yellow show Dahlia, *Olympia*, and a fancy variety, Queen Mercedes, the florets white tinged with purple. A first-class certificate was obtained by Mr. Turner for an excellent bedding Dahlia named George Thomson, of dwarf habit, and producing large numbers of bright yellow well-formed flowers. He also exhibited flowers of a pretty bouquet Dahlia named Dora, the florets of which were white tinged inside with yellow. Messrs. Wm. Paul & Son, Waltham Cross, Herts, exhibited six boxes of cut Roses, a great many varieties being represented. The following were most noticeable for their freshness and substance:—*Madame Victor Verdier*, *Pierre Notting*, *Madame Clemence Joigneaux*, *Beauty of Waltham*, *Dupuy Jamain*, *Alfred Colomb*, *Marie Baumann*, *Duchess of Bedford*, and *Baronne de Rothchild*. A vote of thanks was accorded. Mr. Chambers, West-lake Nursery, Isleworth, sent specimens of a drooping variety of *Pteris serrulata cristata*, and a plant of *Odontoglossum Alexandrie*, bearing a long spike of about twenty flowers. For the latter a vote of thanks was accorded. *Gentiana Andrewsii*, exhibited by Mr. G. F. Wilson of Weybridge, received a similar recognition. Messrs. Haage & Schmidt, Erfurt, Prussia, were accorded a vote of thanks for cut flowers of *Salvia farinacea*.

## NOTES AND GLEANINGS.

ACCORDING to the usual custom the SURPLUS PLANTS will shortly be distributed from the London parks, and Kew and Hampton Court Gardens, and if the clergy, school committees, and others interested make application to the Superintendents they will receive information as to the time and manner of the distribution.

— THE WIMBLEDON GARDENERS' SOCIETY held their first meeting of the season on Monday night last in one of the rooms of the well-appointed bothy in Sir Henry Peck's garden. Sir Henry, it may be remembered, kindly provides tea with substantial accessories to the members attending the meetings. After the repast Mr. Ollerhead in lieu of a paper on gardening delivered a lecture on bees, which was very lucid, comprehensive, and instructive, and was so much appreciated that the members desired that the subject be continued at the next meeting. It is important that gardeners obtain a practical knowledge of bees, seeing that apiculture is increasing so rapidly, and those are fortunate who have the opportunity of gathering instruction on the subject from such a successful bee-keeper as Mr. Ollerhead undoubtedly is.

— WE have had forwarded to us a sample of Carter's CHAMPION SCARLET RUNNER BEANS grown by Mr. J. Pilcher at Peckham Rye. The pods are very large, fine, crisp, and fleshy, and represent a good variety well cultivated.

— "J. M." writes as follows on VEITCH'S AUTUMN GIANT CAULIFLOWER:—"This magnificent Cauliflower is again proving itself far superior to any other variety. We have been cutting it during the last two months, and the heads have been very fine."

— WE have received from Mr. J. House, Peterborough, an EXHIBITION CARD HOLDER. It is made of thin brass of an ornamental pattern, the base being so formed that it can be affixed to a plate or dish; the top containing slits for holding

the prize cards securely. It is suitable for attaching to various exhibits at horticultural shows, where the cards are too often simply placed on the dishes, or are fixed above them in some makeshift and unsystematic manner.

— IN the shrubberies at Kensington Gardens *COTONEASTER AFFINIS* is very attractive at the present time, owing to the numerous dense clusters of small red berries with which the branches are loaded. It is an evergreen or sub-evergreen species, with bright green ovate leaves downy on the under surface, and it attains a height of 15 to 20 feet. It was introduced in 1828 from Nepal, and is closely allied to *C. frigida*. The berries remain on the tree for several months.

— MESSRS. JAMES CARTER & Co. inform us that MR. CATLIN'S NEW ZONAL PELARGONIUMS Lizzie Smith, Edgar Catlin, and Fanny Thorpe, which were certificated at the Show of the Pelargonium Society at South Kensington this year, have passed into their hands for distribution.

— It is proposed to present the REV. H. H. D'OMBRAIN with a testimonial in acknowledgment of the services he has rendered in connection with the National Rose Society, and by his numerous writings on floricultural subjects. Subscriptions may be sent to the Rev. Canon Hole (President of the National Rose Society), Causton Manor, Southwell.

— A VERY pretty plant for the mixed border is *HYPERICUM PATULUM*. It is dwarf and erect in habit, with ovate sessile leaves and small cymes of bright yellow flowers, the petals of which are roundish and slightly incurved. Like other species the flowers are of short duration, but to compensate for that defect they are produced very freely. It is a native of Nepal, whence it was introduced about 1823.

— IN the greenhouse at Kew the small evergreen Myrtaceous shrub, *BEAUFORTIA PURPUREA*, is now flowering. It is an attractive plant well adapted to pot culture, and thrives in a compost of peat, loam, and sand. The leaves are opposite, narrow, and rigid; the small crimson flowers being borne in globular clusters, and during the latter part of summer and early autumn they continue very bright and pretty.

— THE City Press states that the Markets Committee of the Corporation of London, having received proposals for the erection of a NEW FRUIT AND VEGETABLE MARKET at Smithfield, have accepted the tender of Messrs. John Mowlem & Co. for £109,000. The market is to be erected from the designs prepared in the City architect's office, to harmonise generally with the central markets for meat, poultry, and provisions already erected at Smithfield.

— IT is strange that the freely-flowering *PYRETHRUM ULIGINOSUM* is not more frequently seen planted as a background to herbaceous borders or amongst shrubs, as in such positions it appears to great advantage. The leaves are narrow and deeply serrated; the flower heads (capitula) have yellow central florets, and long, spreading, pure white outer florets. As the heads are produced in abundance good clumps of the plant are very effective. The species has been known in this country since 1816. It is a native of Hungary.

— MR. H. C. OGLE writes as follows concerning the method of FUMIGATING explained in the columns of the Journal by our correspondent "W. R. F.," on April 24th:—"I find a common *ls.* benzoline lamp preferable to a candle on account of the candle wasting away and the flame becoming too low to burn the tobacco."

— DURING the autumn months the PRICKLY PEAR OR INDIAN FIG is common in the London markets. The chief supply of this fruit is obtained from Sicily, where the *Opuntia vulgaris* grows both in a wild and cultivated state. The peculiar flattened succulent stems grow extremely fast, and the plant is employed in some countries to form fences round the houses and gardens. The inhabitants of Sicily consider it of great value as an esculent.

— WE recently saw in Covent Garden Market some specimens of the fine East Indian fruits MANGOES, which are rarely imported except in the form of pickle. This fruit, which when fully ripe is said to be only surpassed in flavour by the famous Mangosteen, is the produce of *Mangifera indica*, a tree included in the Cashew family. The fruit is prepared in a variety of ways in India, as preserves, jellies, pickles, and in tarts.

— AT present the herbaceous borders at South Hill are very gay with *TIGRIDIA PAVONIA GRANDIFLORA* planted in clumps. Its fine scarlet flowers contrast well with *Anemone*

*Honorine Jobert* and other autumn-flowering plants. This fine variety of *Tigridia* should be more generally grown in mixed borders.

— "WE have," writes Mr. Cowan, "lately inspected some beds in the flower garden at the new park, Gateshead-on-Tyne, which were filled with *Godetia* Lady Albemarle. The beds have presented glowing masses of colour since the beginning of July, the season having been favourable for this fine *Godetia*, which is very valuable for bedding purposes."

— MR. HUGH CRAWFORD has been appointed gardener to R. De la Poer, Esq., Kilcronagh, Waterford; Mr. H. H. HURT succeeds Mr. Geddes as gardener to J. Paget, Esq., Stuffynwood Hall, Mansfield, Notts; Mr. W. ROGERS, late foreman at Brantingham Thorpe, becomes gardener to C. H. Wilson, Esq., M.P., Warter Priory, Pocklington; Mr. EDWARD WILLMET, Berkeley Castle, to C. S. Roundell, Esq., Osborne, Fernhurst, Haslemere; Mr. N. FULLER, late foreman at Possingworth, to Col. Hagart, Eastbury Manor, Guildford; Mr. J. H. JOHNSTON to Madame Lyne Stephens, Upper Grove House, Roehampton; Mr. G. ORMISTON to the Earl of Selkirk, St. Mary's Isle, Kirkcudbright; and Mr. A. WATERS to H. Birkbeck, Esq., Stoke Holy Cross, Norwich.

— ONE of the most charming sights we have seen this autumn is a house of *TUBEROUS BEGONIAS* at Brambletye. Some of the newer varieties are remarkable for brilliancy of colour, others for softness and delicacy of tint, also for the large size of the flowers and varied colour of the foliage. Mr. Jenks called our attention to seedlings of much promise, some having foliage of a greyish hue with bright pink flowers, forming an admirable contrast to the green-leaved scarlet and crimson varieties.

— LYING on our table as we write is a spray of *POLYGONUM SIEBOLDII*, so brilliant in autumnal beauty as to render it worthy of culture for that purpose alone, brief as is its duration, even if it were not the really valuable ornamental plant it is. The leaf has lost its normal green hue, and is now of an orange brown mottled and blotched with scarlet as rich as it is ever seen on the foliage of *Ampelopsis Veitchii*.

— THE abnormal gloom and LOW TEMPERATURE of the past summer retarded the growth of everything so much that the flowers of most hardy trees and shrubs have expanded out of season. *Desfontainia spinosa* is now in full bloom, the flowers of *Lilium speciosum* are only beginning to open, Pampas Grass as yet only affords us a faint glimpse of its silvery inflorescence, and many Hybrid Perpetual Roses are as full of bloom as they usually are early in September.

— A *propos* of *DESFONTAINIA SPINOSA* Mr. Prinsep informs us that the plant of it established on the lawn at Buxted Park, and now "nicely in bloom," last winter bore with impunity 22° of frost and full exposure to cold cutting east winds. From this important fact it would appear that this charming addition to our hardy shrubs is available for gardens generally, and its culture need not be confined to the southern counties.

— OUR correspondent "J. R. S. C." writes:—"I was shown the other day an instance where 'LADYBIRDS' had infested ripe Apricots, half a dozen of those beetles being often found in the fruits gathered. Obviously however, they could only enter the fruit when it had been punctured previously by wasps or other insects; but it was something new to me to discover *Coccinellæ* under these circumstances, though their penchant for the sugary aphides might indicate that any sweets would be acceptable to them. Several persons have called my attention to the abundance of ladybirds this autumn, so we may hope they have been doing execution amongst the aphides. The too familiar *A. rosæ* has been less conspicuous than usual this season; but then, again, the caterpillar of the Rose-leaf roller (*Argyrotoza Bergmanniana*), has been a nuisance in some gardens."

— CHAMÆROPS FORTUNEI.—If "A GLOUCESTERSHIRE PARSON" wishes his garden embellished with Palms that will stand uninjured the severities of winter without protection he should plant *Chamærops Fortunei*. This Palm has stood out for many years in the nurseries of Messrs. Backhouse & Son of York, and not only grows well but blooms regularly, and seems quite at home. The soil at York is of a light sandy nature, which is doubtless favourable to any plant of doubtful hardiness. I think it is worthy of note that while such shrubs as Laurels, Aucubas, *Laurustinus*, *Yuccas*, &c., were much injured

during the past winter, this Palm did not seem to feel the severity of the weather, but grew and bloomed as usual.—  
SUSSEX GARDENER.

### SELECT CAPE AND NEW HOLLAND PLANTS.

#### No. 3.

#### ROELLA.

THIS is a small genus of plants belonging to the Campanulaceae, the chief characteristic being derived from the capsule,

which is elongated and two-celled, opening by a hole in the apex. The species here given is a somewhat delicate plant, and requires care and attention to grow it satisfactorily. As a proof of its beauty it still may be found in a great many private collections, and is well deserving the attention of all plant-growers. Pot in good fibry peat, adding about a third of sand; and if some pieces of sandstone or charcoal are introduced they will serve to keep the soil more open and greatly benefit the plant. Special care must be given to the drainage, not so much as regards quantity, as in the matter of covering in order to prevent the soil running into it and stopping the



Fig. 33.—ROELLA CILIATA.

free percolation of the water; for although the plants enjoy a liberal supply of water they cannot suffer the slightest stagnation, for when this comes about either at the roots or in the atmosphere its greatest bane, mildew, is sure to make its appearance. By no means stimulate the plants during winter, but have the growths well ripened in autumn, and the plants will pass through the dull season in good condition. The growths made in winter are always weak and miserable. A dry atmosphere with a free circulation of air are requisite for the health of the plants and the prevention of mildew.

*Roella ciliata* (fig. 33).—A slender-growing, much-branched, greenhouse shrub, attaining a height of some 2 or 3 feet. Leaves alternate, linear, erect, ciliated, Heath-like, and light

green. Flowers terminal, sessile, campanulate or funnel-shaped, with a five-lobed spreading limb. There are five distinct colours in the flowers, which, being disposed in rings or circles, produce a striking effect. The base of the corolla is yellowish white; succeeding this is a circle of deep bluish black; above this comes another circle of lavender blue succeeded by a narrow ring of white, whilst the spreading lobes are pale purple. It blooms during May, June, and July. Cape of Good Hope. 1774.

#### PIMELEA.

A genus of handsome-flowered shrubs belonging to the Daphne family (Thymelaceae). The name refers to their peculiar fat or oily seeds. They are slender branching shrubs,

having dense capitate heads of flowers, which are surrounded by an involucre of leafy bracts, mostly terminal, or more rarely axillary. Like many other beautiful plants, Pimeleas if neglected grow lanky, lose their lower leaves, and become excessively ugly; indeed we have seen plants which could be compared to nothing but scrubby brooms. In this state it requires a great deal of faith in an amateur to believe in their desirability for the ornamentation of the greenhouse, but when properly managed few plants give greater pleasure. To accomplish this the plants when some 2 to 3 inches high should be stopped; and the laterals when about the same length again and again must have their points pinched out, which will soon result in the formation of a handsome bushy plant. When this is accomplished and the plants arrive at a flowering stage the last stopping should take place about the middle or latter end of July, when, if the growths are properly ripened, every branch will be crowned with a head of bloom the following spring. After flowering the plants should be cut hard back, and the same attention paid them again in the matter of stopping. Pot in fibry peat and light sandy loam, in the proportion of three parts of the former to two of the latter, adding sufficient sand to make the whole feel gritty when taken in the hand. Pot moderately firm, drain well, and water liberally but carefully during summer. In winter care must be taken to water only when dry, but they must not be allowed to become sufficiently dry to suffer by want of moisture. A free circulation of air at all seasons is necessary for their well-being, and during the hottest weather in summer some slight protection from the sun will be found very beneficial.

*Pimelea spectabilis*.—A large-growing species of great beauty. Leaves opposite, linear oblong, smooth and light green. Flowers produced in large terminal heads; involucre slightly coloured; corolla pink and white. In the form called *pectabilis rosea* the flowers are wholly deep rose. It blooms during April and May. Swan River. 1840.

*P. Nieppergiana*.—A somewhat strong but very compact-growing species. Leaves oblong ovate, dense, and dark green. Flower heads terminal, large and pure white, produced during May and June. Swan River. 1846.

*P. macrocephala*.—This is a robust species, but very rarely to be met with in collections. Leaves opposite, broadly lanceolate, somewhat secund, slightly glaucous and light green. The heads of bloom are large and spreading; colour deep rose. It flowers during May and June. Swan River. 1848.

*P. Hendersoni*.—A smaller-growing plant than either of the preceding. Branches slender. Leaves opposite, linear lanceolate, and bright dark green. Heads of flower terminal, crowded, rosy pink in colour. May and June. King George's Sound. 1837.

*P. elegans*.—This is a free and robust-growing species. Leaves opposite, broad, ovate lanceolate, about an inch long, and deep green. The heads of flower are large, globose, crowded, creamy white or straw colour. May and June. New Holland.

*P. diosmaefolia*.—Bears some resemblance to *P. decussata*. It is, however, distinguished by its larger heads of bloom and the larger but less dense leaves. It is a free-branching plant, with oblong decussate bright green leaves. Heads of flower terminal, somewhat spreading, and warm rose colour. June and July. New Holland. 1826.

*P. decussata*.—A compact-growing species with decussate leaves, which are ovate, coriaceous, bright shining green above, paler below. Heads of flower dense and bright rosy pink in colour. May to July. New Holland. 1824.

#### GNIDIA.

This genus belongs to the same natural order as Pimelea, and the various members bear some resemblance to it. They are slender-growing Heath-like plants with capitate flowers. It includes many species, several of which are employed economically. Pot in two parts fibry peat, one of good light loam, and one of sand. For general treatment see Pimelea.

*Gnidia pinifolia*.—A very handsome species. Leaves scattered, linear, obtuse, triangular, and light green. Flowers terminal, capitate, dense, creamy white, changing with age to a light yellow, very fragrant. It blooms usually during March and April, but if stopped late the previous summer the flowers will appear about May. Cape of Good Hope. 1768.

*G. simplex*.—This is not so fine a plant as the preceding; it is, however, well deserving general attention. Leaves linear, acute, bright green. Flowers produced in terminal umbels, pale yellow. It blooms during May and June. Cape of Good Hope. 1786.

*G. imberbis*.—A pretty, compact-growing, and much-branched species. Leaves three-angled, linear acute, dark green. Flowers terminal, capitate, somewhat short, sulphur yellow, to which the red stamens afford a pleasing contrast. It blooms during May, June, and July. Cape of Good Hope. 1792.

#### GASTRONEMA SANGUINEUM.

A CORRESPONDENT, J. Wilson, asks us for some information relative to a plant he has received from South Africa under the



Fig. 34.—*Gastronema sanguineum*.

above name. We cannot better reply than by submitting the accompanying figure and description. It is a greenhouse bulb belonging to the Nat. ord. Amaryllids (Amaryllidaceae), and to Hexandria Monogynia of the Linnean system.

A hollow glaucous stem, 4 or 5 inches high, supports a single sessile flower of its own length, surrounded at the base by a pair of long narrow spathes. The tube is slender and greenish, and expands into a deep rose obconical throat, having six crimson lines running from the sinuses of the limb on the outside, and on the inside as many white bands, each with a crimson streak along the middle. The limb is very deep rose colour, with six equal-spreading, oblong, whole-coloured seg-

ments. The leaves are nearly as tall as the flower, dark green, in a very small degree glaucous, and gradually widen towards the end, which is blunt.

The bulb should be potted in rich sandy loam, and treated like *Habranthus* and similar bulbs. It is increased by offsets. It is very handsome, deserving general cultivation even in the most select collections. It was introduced from Caffraria in 1845.

#### POTATO MAGNUM BONUM.

IN the spring of the present year I purchased 14 lbs. of Suttons' and 14 lbs. of Carter's Potatoes under the above name as trial samples. Not being an exhibitor I had no other object in view than to test the respective qualities of the two varieties, or rather a Potato which I suppose was originally the same. On the 4th of April I planted them side by side on a piece of ground that had been for years a Globe Artichoke bed, two rows of Suttons' Magnum Bonum and two rows of Carter's Improved Magnum Bonum, all 3 feet apart between the rows and 1 foot from set to set leaving a clear margin on both outside of about 3½ feet. Every Potato grew, but when they fairly started a few inches out of the ground I noticed that Suttons' intended to take the lead in the race, which they did, and for several weeks before the growing season was over they were from 8 to 10 inches higher than Carter's, and continued the lead till the end of the season. The stems also showed a more robust habit, and at the end of the season held out a fortnight longer than did Carter's. On the 15th of September I lifted them, feeling rather anxious to ascertain if there was any difference in the two samples in size or general bulk. Produce: Suttons' 14 lbs. gave 210 lbs. of good healthy tubers and six diseased tubers; Carter's gave 175 lbs. of good tubers and fourteen diseased tubers. Suttons' uniformly being throughout the sample a trifle larger than Carter's. I can discover no difference in the shape of the Potatoes, but the question may arise whether the difference in growth constitutes them distinct varieties. Suttons' has with me proved the heaviest cropper and the most perfect disease-resister I have grown this season.—H. W. WARREN, *Hurstbourne Park Gardens*.

#### AMPELOPSIS VEITCHII AT FROGMORE.

NOT many plants introduced to our country during the past twenty years have proved so useful and have maintained their popularity so well as has this now familiar and beautiful climber. Its easy culture and its adaptability to various positions in town and country have rendered it a general favourite. When seen in its full autumnal brilliancy the effect is irresistible, and after admiring a well-coloured specimen the next and almost inevitable step is for the spectator to possess a wall plant so accommodating and so strikingly attractive; and so the plant spreads until the demand for it now is greater than ever, which is the highest possible testimony of the value of a plant which, under the name of *A. tricuspidata*, was first placed before the public by Messrs. Veitch in 1868. The plant, however, is now known as *A. Veitchii*, and will continue so to be known for generations to come, and certainly no plant can better commemorate the name of its introducer than this firmly established and widely cultivated climber from Japan.

*Ampelopsis Veitchii* now adorns many a villa and even cottage garden, droops in gorgeous drapery over many a rockery in palatial establishments, and is now the most conspicuously brilliant object in the Royal Gardens. As covering a number of large pillars and buttresses at the entrance of Her Majesty's kitchen garden and spreading on the adjacent offices it is now, when seen under the advantages of a bright day, simply magnificent—a glowing mass of metallic lustre of chocolate, crimson, and scarlet, which no flowers in the garden can equal.

The examples, too, at Frogmore are instructive as well as attractive, for there are several plants growing on different aspects, produced by the sharp curve of the wall—almost a half circle. The foliage is the most brilliant where it is exposed to the sun—west and south-west, the plants simply growing in the gravel walk. The leaves are much smaller and comparatively dull where the wall is shaded—facing northwards, and where the plants are growing in a cold damp border. The plant, then, requires a warm dry soil and sunny position to bring out its full beauty.

One pillar is much more heavily clothed than the others, the leaves of the two plants covering it being very large, 5 or

6 inches in diameter, only slightly lobed and intensely dark and shining, but not so fiery in appearance as those of the adjoining plants. The striking difference referred to has given rise to some debate on the spot as to whether there are two varieties or whether the dissimilarity, which no one can fail to notice, is due to "something in the soil." It seems singular that the soil at the base of one pillar of the entrance gate should be so far different from that around the opposite pillar as to cause a difference in growth so manifest; but then, again, it is about equally singular that the only two plants having the larger and darker foliage should, out of about twenty, happen to have been planted together. The dissimilarity of foliage is certainly most marked, but it is something to know that both examples of growth are equally imposing, the one by the large and dark foliage, the other by the smaller and brighter leaves.

Wherever a suitable position can be found for *Ampelopsis Veitchii* there a plant should be grown; it will cling to any building to which any other plant will adhere, and with a minimum amount of trouble will produce a brilliant mass of colour during the autumn months. The Frogmore plants have been "in colour" for upwards of a month.

#### FRENCH NOTES.—No. 3.

BOURG-LA-REINE, SCHAUX, &c.

IF the condition of my poor friend M. Souchet saddened my visit to Fontainebleau, that of my friend M. Margottin was calculated to make me feel just the reverse. Our acquaintance dates from the same period, and since that time I have never but once visited Paris without paying him a visit. I will not say that he has not altered since that time, but it was a real pleasure to see how hearty and genial he is; and he has gone through something, too, since then. The Badois, a very indifferent (as far as conduct and manners go) contingent of the German army, occupied Bourg-la-Reine during the siege. They took possession of my good friend's house. They did worse—they destroyed it, tore up the staircase for firewood, damaged all the furniture, and left it in such a condition that he did not care to live there again. He and his family retired to Paris, to come back after the city was taken and to find desolation where he had left all in order. Well, like a brave man he has struggled through it all. He has built himself a new house; has seen his son, good young Jules, married, and his grandchildren growing up around him. But it is a sad index of the uncertainty that still hangs over France, that when I said to Madame Margottin, speaking of her troubles in the war, that "It is all over now, I hope," "Pour dix ans, monsieur," ten years being in her estimate the extent of their tranquillity. Arthur Turner, the worthy son of a worthy sire, met me at the station in Paris at ten o'clock. We had promised to take our breakfast with Jules at twelve o'clock, and visited his father's nursery first. Here a hearty welcome awaited us, and a fine Cantaloupe Melon and some capital specimens of Bon Chrétien Pear provided for our breakfast. It is a curious fact as indicating the difference of taste of the two countries, that this Cantaloupe Melon is preferred to the more highly flavoured varieties which we grow. M. Margottin had a good collection of these in frames, and yet none of them find so much favour as the thick-skinned rough-looking Cantaloupe. That it should be grown as a hardy sort I can quite understand, but do not equally so the taste; and why is a slice of Melon considered indispensable in the early part of a dinner or *déjeuner*? In looking round the garden we were struck with a pretty little climbing Strawberry with bright red fruit and yellow flowers, the first worthless for eating but quite ornamental; and as the foliage is small it makes a very pretty little climber for a pot. What is it? The only yellow-flowered *Fragaria* that I can find any note of is *Fragaria indica*: can it be that? The Roses looked well and the buds had taken. By-the-by, M. Margottin told us that he does not use either cotton or bast for tying-in the buds, but rushes. These are cut in any of the ditches, dried, and then before being used dipped in water; the bud is tied in, and by the time that it has begun to swell the rush decays, and so all the trouble of going round and untying is done away with. It has thus a great advantage over the ordinary tying materials. It is to be procured, I believe, in Paris, and is very cheap. If I recollect rightly half a franc's worth would suffice for a thousand plants. I found that as a rule the French growers insert three buds in a standard, thus securing a fine head. Amongst minor things M. Margottin pointed out to us a very excellent French Bean, *Précoce de Temple*, especially good for Haricots, a vegetable



which is beginning to be more appreciated amongst us for winter use, but not nearly so much as it ought to be.

In M. Jules Margottin's garden we saw a Grape of which he spoke very highly, but which I do not find in the "Fruit Manual," and which therefore I conclude is but little known. He called it *Gradiša*, and said he believed it was Hungarian. It is somewhat like *Chasselas de Fontainebleau*, which is so great a favourite with French people, but more transparent, not the same beautiful tinge, and of excellent flavour and very free-bearing. His Vines are uncommonly well managed, and those for fruiting in pots were excellent. His stock of *Roses* was admirable, and I do not ever remember to have seen a more splendid piece of standards than those he showed us; the stems were beautifully straight and the heads exceedingly fine. He had along his wall *Maréchal Niel* growing most vigorously, and adopted a plan which might be, I think, successfully imitated here—viz., placing over them in the spring some spare lights, thus sheltering them from the weather, giving them a chance of coming in a little earlier, when the buds are in as great demand as with us; and then when the flowering is over, the lights being taken off, the plants become more hardy than when grown in the house. Besides, the economy of space is a great matter. He had some good *Roses* in pots for exhibition, but not like those exhibited by our great growers Messrs. Paul and Son, and Turner; nor were they treated in the same way, for they had been out of doors plunged since they had bloomed. Of course, like all *Rose*-growers, our young friend is anxious to have his name connected with some good *Roses*. *Boiseldien* sent out by him is a good variety, and he has now one (not to be let out this season) on which he builds much hope—a pure white *Gloire de Dijon*. We saw it in the bud state, and it certainly bore out the character. It is not, I believe, a sport, but has apparently from its wood some *Souvenir de la Malmaison* in it.

He has an ingenious plan for preparing his *Briar* stock for planting. A sort of cutter, something in its manner of using like a chaff-cutter. One is large and strong; into this he places the root, one man doing it. With the left hand he holds the *Briar* and then pares off the roots, making the knob perfectly smooth; it is then passed over to another man, who cuts the stem either for a standard or half-standard with an implement of the same character, only not quite so strong. The cut is very clean, and it is very expeditiously done.

After partaking of his hospitality we went to Sceaux, and taking a *fiacre* paid a visit to Messrs. Thibaut & Keteleer's two museums. The last time, now many years ago, that I had the pleasure of seeing them was at the *Rue de la Roquette* in company with the late John Standish. Since then they had, like many others, gone through much. Their establishment at Sceaux had been completely destroyed during the war, and it has required a great deal of perseverance and money to recover their garden. It is the only establishment in the neighbourhood of Paris that at all approaches our great London firms of Veitch, Bull, Williams, Henderson, and others, but even it falls very far short of them in magnitude and value of its contents; but there is always sure to be something interesting.

The Tuberous-rooted *Begonias* form an interesting feature here, and certainly some of the finest and most distinct that I have seen are here. One particularly struck us, a yet unnamed seedling (No. 9), intense deep scarlet and very large. Each petal measured more than 2 inches, and the whole appearance of the plant was remarkable: in fact as we walked through I saw hundreds of plants in bloom. We came back to No. 9 as the best. There was also another remarkable novelty; the petals were French white, and two of them distinctly margined with pink; while of those sent out last year *Le Géant*, a very fine vigorous grower with deep velvety crimson flowers, was very fine. However, it is, I think, not unlikely that the desire to possess named varieties will diminish, for here we saw good—may, even large flowering plants from seed which had been sown in March; and where good seed can be had one is sure to obtain some, if not quite, yet nearly, as good as named varieties. It is thus that the *Cineraria* and *Calceolaria* have come to be grown. How few ever think of asking for named varieties! Good seed is obtained, and the result is a fine display of vigorous growing plants. There was also a very large collection of Zonal and other *Pelargoniums*. M. Keteleer premised of the double white that *Candidissima* and *Mont Blanc* were still the best, while I could see that the French-raised *Pelargoniums* were preferred to the English varieties, those of Boucharlat, Alegatière, and Lemoine being most numerous grown. There was a very curious little—in fact miniature—

*Ivy-leaf Geranium*, very small, and excellent for a climbing pot plant.

There were also in the garden very many interesting subjects. I found both here and at Fontainebleau the *Bamboo* flourishing, and yet we cannot grow it in England. Why is this? The temperature of Paris and its neighbourhood is considerably lower in winter than with us, and their frosts are much more severe. M. Keteleer mentioned that the variety called *Queloi* is the hardiest, and I hardly see why in sheltered places it should not do. I know that in the south of Ireland and Cornwall it succeeds, but I believe that even there it succumbs in some winters.

In a small enclosed space M. Keteleer had what he called his own garden, containing choice specimens of some of the rarer kinds of *Conifers*—*Abies*, *Retinosporas*, *Thuopsis*, &c. Of these he seemed, and justly so, very proud, as doubtless in the lower temperature of Paris there must be a greater difficulty in growing them than with us. The collections of *Delphiniums*, *Phloxes*, &c., were also very good, although I did not observe anything particularly novel amongst them.

The whole neighbourhood is very pretty, undulating, and well wooded, while nurseries abound, that of M. Croux being one of the most extensive fruit tree nurseries in the neighbourhood of Paris, and his trees most wonderfully trained; and we were particularly struck with the quite open character of the various grounds, so that, as my companion quietly observed, it must be rather a difficulty in executing an order to know quite where the division between the grounds existed. Even if one had no horticultural tastes all the surroundings here are well worth a visit, but to those who have there is no greater treat in the neighbourhood of Paris than that which I have thus briefly sketched.—D., *Deaf*.

## SHEFFIELD, ITS GARDENS AND GARDENERS.

SHEFFIELD is well known as one of the most important towns of the kingdom, but its gardens and gardeners are but little heard of beyond the district known as Hallamshire. The leading gentry are wealthy and liberal, as the various edifices erected by private munificence for the public benefit—churches, schools, institutes, almshouses, libraries, &c.—testify; but they have not, as a body, entered in any spirited manner into the delightful pursuit of horticulture. Travellers passing across the town by rail, and knowing little more of it than the flying glance affords them, may naturally conclude that the nature of the trade of the place and its accompanying smoke are insurmountable impediments to the successful culture of plants and fruit within a reasonable radius of the reeking valley below, for Sheffield is in a valley nearly surrounded by hills. But cross this busy valley and ascend the hills, and even before the outskirts of the town are reached gardens may be found well worthy of the name—gardens not large, but as clearly cherished as they are obviously well managed. Continue to ascend, and imposing mansions are seen surrounded by grounds more or less extensive, and a district highly picturesque—deep and well-wooded dales and bold hills producing such a contrast with the scene below as is probably not to be equalled in the kingdom. It is on the higher ground of Sheffield that gardening is conducted—where men, skilful and industrious, well maintain the credit of the craft; where plants are grown worthy of any exhibition, where *Orchids* are cultivated in a manner rarely surpassed, where fruit is produced of the highest order of merit, and where florists' flowers are raised of the first order of excellence.

Such is Sheffield and its gardens. Its gardeners are emphatically men of action, for in no district with which I am acquainted is a greater amount of work done in a better manner than is to be seen in the gardens at Hallamshire. They work, too, in comparative obscurity, there being no great horticultural exhibitions to afford public expressions of their skill and to stimulate them to further efforts. Local shows there are—perhaps too many, but no central society which the town and district could so well support. Yet the gardeners are conscious of the necessity of mutual aid and friendly co-operation, hence have established an Improvement Association, for the sole purpose of making them better gardeners, better servants, and better men. By the reading of papers and discussions thereon, and by giving such aid as they can afford in cases of misfortune or temporary distress that may befall any member of the body, they are engaged in a work that is unquestionably good and worthy of countenance and support.

They, too, have occasional shows; and here again it is note-

worthy to observe that they exhibit for honour and not for gain. At the Chrysanthemum show, for instance, to be held in November no money prizes are provided for the members, but only certificates of merit; but in order to bring to their midst superior examples of culture, and to provide a higher standard of excellence to which they hope to attain, they provide a silver cup and money prizes to be competed for by cultivators in any part of the country, subject to the payment of a small entrance fee, which is usual and proper under such circumstances. The arrangement referred to is proof of the earnestness—the real gardening spirit—that animates the cultivators of this district, and their action, it must be admitted, contrasts favourably with the mere money-hunting exhibitors who support shows mainly for what they can get out of them. “Big prizes,” says a florist of great experience and high reputation, one whom to know is to esteem—Mr. B. Simonite—“have done more than anything else to banish that true earnest love for flowers that real florists feel, and have led to temptation and questionable tactics in exhibiting that are closely akin to mere speculation.” A different spirit prevails about Sheffield. The object desired is self improvement, and not a mere acquisition of money, and their endeavours therefore merit support and deserve success.

Very briefly in a future issue some of the Hallamshire gardens shall be more particularly referred to.—J. W.

### ASCLEPIAS CURASSAVICA.

THIS species is one of the most attractive of the peculiar and interesting genus *Asclepias*, and its bright flowers very pleasantly enliven the appearance of a stove or intermediate house at the present time. As the cultivation of the plant is by no means difficult and the flowers are produced freely, it is not surprising that it should have early received the attention of cultivators; but even now, although introduced in 1818, it is not nearly so generally grown as it deserves. This is a South American species, and it bears numerous umbels of flowers the petals of which are reflexed and deep orange in colour, while the small cup-like appendages that form the staminal corona are bright yellow. The contrast is a very pleasing one, and the brightness of the colours is relieved by the dark green simple leaves that clothe the stems. There is also a white-flowered variety that is well adapted for a companion to the ordinary form.

In the treatment of these plants no especial skill is requisite, and few plants, considering the little attention they demand, produce more gratifying results. Propagation may be effected by cuttings, seeds, or division of the plants, but the former method of increase is the most satisfactory. Cuttings should be prepared in the usual way early in spring and inserted in light sandy soil, the pots being placed in an ordinary propagating frame. When the cuttings are well rooted they should be carefully turned out of their pots and separated, injuring the young tender roots as little as possible. They may then be placed in 60-sized pots, employing a compost of loam, well-decayed manure, peat or leaf soil, and sand. As they fill the pots with roots shift the plants into larger pots and place them in the stove, supplying water freely. Flowers will be produced the first season, and a stock of these small plants is always useful for decorative purposes. As the plants go out of flower late in autumn remove them to a cool position, partially withholding water during the winter. In March turn the plants out of their old pots and remove some of the soil from their roots, repotting in the compost previously recommended. To obtain a succession pot batches of plants in March, April, and May, and by this means a supply of flowering-plants can be maintained from June till October.—L. C.

### NOTES ON VILLA AND SUBURBAN GARDENING.

BEDDING plants in most gardens are now being removed. The cold foggy nights give a warning that it is not safe to risk any tender plants out after this. As they are lifted they must be potted in small pots and stored away pretty thickly together under glass. The lowermost leaves of *Pelargoniums* should be removed at the time of potting; but do not cut the plants back now, as it causes the majority to damp and speedily decay. By allowing the tops to remain they will furnish in the early spring a good supply of strong cuttings, which when taken off will cause the old plants to break quickly and make dwarf and stocky plants.

**CALCEOLARIAS AND GAZANIAS.**—Cuttings of these plants will strike readily now if inserted in a sandy soil in cold frames, and

possibly make better summer plants than those taken some time ago. *Echeverias* and *Sempervivums* that are not sufficiently hardy to endure the winter should be lifted and packed away closely in boxes, &c., damp being one of their greatest enemies; they require protection as much from rain as from frost. We have preserved numbers of these by merely making a raised bank against a dry wall, and planting the succulents thickly thereon; a coping of boards threw off the rains, and a covering of mats protected the plants in frosty weather.

**CHRYSANTHEMUMS.**—It is not safe to allow these to remain out of doors any longer, but be particular not to confine them in a close atmosphere, or mildew will set in and the foliage will speedily decay. Continue to supply them with liquid manure now that the flower buds are fast swelling, but discontinue the use of it as the flowers expand. Train the growths of plants intended for specimens, and disbud all after growths as they appear. If there is any aphides fumigate as soon as possible, otherwise these insects will injure the flower buds, and if mildew spreads keep it under by frequent applications of sulphur. In the case of plants intended for exhibition, and if the structures for housing them are low and small, it is a very good plan to remove the stakes and secure the plants to the rafters near the glass; they will in this way produce large and full flowers. Dahlias are as yet blooming profusely; as soon as the leaves are killed by frost cut off the stems near the ground, dig the tubers up carefully, and place them under cover to well dry before storing them safely away in their winter quarters.

**WINDOW BOXES.**—These will now require renovating, the summer occupants being entirely removed, substituting in their places plants of a hardier constitution, and for this purpose there is nothing to surpass many of our hardy and elegant shrubs, such as *Ivies*, *Aucuba*, *Box*, *Euonymuses*, *Arbor Vitas*, *Junipers*, *Betulae*, *Cryptomerias*, *Cupressuses*, &c. Small plants of any of these are so graceful and give such a cheerful appearance during the dark dull days of winter, and can be purchased so cheaply, that no windows in populous towns should be without them. They are not particular to soil, and will endure much rough usage, but when left in small pots exposed to extreme frost they cannot but be expected to finally perish.

### WORK FOR THE WEEK.

#### KITCHEN GARDEN.

CLEAR the quarters of exhausted crops, and manure, dig, or trench the ground as may be necessary. Deep cultivation is essential to the production of profitable crops of high class vegetables. The shallow surface soil of most vegetable gardens is, from the frequent heavy manuring and continuous cropping, full of decaying matter, which encourages a gross growth in the young plants that is not sustained when they are approaching maturity; hence they succumb to drought, and do not afford nearly so good a return for the manure applied as in soils loosened to a greater depth. Trenching should be practised every second or third year, turning the top spit to the bottom, and bringing the bottom to the surface. The soil brought up should be distributed as roughly as possible, and when the ground is dry with frost manure may be applied. It may lie on the surface through the winter, and be forked in during favourable weather in early spring or late winter. Sandy soils are not nearly so much benefited by digging or trenching and exposing to the influence of the atmosphere in winter as those of a strong or clayey nature, and exposure to the air only hastens the decomposition of those substances to which they owe their fertility. Prior to turning up for the winter most soils will be benefited by an application of lime at the rate of about eighty bushels per acre. Such soils will also be permanently improved by a dressing of clay or marl; twenty cartloads per acre is a good dressing, spreading it on the surface and allowing it to be disintegrated by exposure to frost before digging it in. Old gardens are often advantageously improved by the addition of fresh loam, and if turfy it will prove most effectual. The main crops of Carrots, Beet, Salsify, and Scorzonera should be taken up on a dry day, and be placed in a dry airy shed to become moderately dried before storing away. In lifting and trimming Beets care must be taken not to injure the roots, or the colour will suffer. Store them away in sand in a cool shed or cellar. Complete the planting-out of Lettuce plants to stand the winter, and the principal crop of Cabbages must not be delayed in planting. Any surplus Cauliflower plants not required for planting in frames or under hand-lights should be pricked off near a wall with a south aspect, where they will endure an ordinary winter, and if planted out in spring form a succession to those from hand-lights. Cauliflowers coming into use will require attention in the case of sudden frosts, breaking a few of the leaves down over those more advanced, which keeps the heads clean and white; but in case of severe frosts the plants should be lifted and laid in pits, &c., where protection can be given. Crops that are to stand the winter should be kept free from weeds, and be thinned so as to induce a sturdy habit. Lettuces and Endive ready for lifting should be planted in frames, and with ordinary regard to ventila-

tion and protection they will keep in good condition for a long time.

**Forcing Department.**—Make successional sowings of French Beans in pots, employing moderately light rich soil. If a sowing were made in low pits or houses for a late crop the plants will require attention to prevent their damping-off, and should have a temperature of 65° to 75° by day, and 55° to 60° at night. Periodical sowings of Mustard and Cress will be necessary to maintain the supply.

#### HARDY FRUIT GARDEN.

Where necessary, preparations may now be made for lifting or root-pruning, operations that are best performed before the leaves fall, as their presence is necessary to induce the formation of fresh rootlets before winter. There is danger, however, in commencing operations too soon, as with sappy immature wood too great a deprivation of roots will cause the comparatively young leaves and wood to shrivel. In lifting trees that have filled their allotted space on walls, &c., a trench should be taken out as deep as the roots are found, 6 to 8 feet from the bole of the tree, carefully forking out the soil so as not to injure the roots, which must be replaced in fresh soil. In making or renovating fruit-tree borders a little extra attention at first would often save much after labour and outlay. Some plant trees without any regard to the character of soil and the necessity of drainage. All borders should be efficiently drained if necessary, and for wall trees the bottom of the border should have a good fall from the wall to the front, and have a foot thickness of brickbats or rubble placed under the soil, and to keep it open be covered with turves or litter of some kind. The depth of the border should be 2 feet, and turfy loam taken off with its turf 4 to 6 inches thick will suit most fruit trees without any addition. If of a heavy or retentive nature it will be improved by the addition of charred refuse, road scrapings, and old mortar rubbish, whilst if light an addition of marl and burned clay will prove beneficial. The planting of fruit trees should be performed as soon as the leaves have fallen, or if they are on the spot they may be transferred to their new positions when showing indications of falling. In preparing sites for new plantations of Currants, Gooseberries, Raspberries, &c., drainage must first be attended to, and the ground then trenched and well manured. Remove all useless shoots from every description of fruit tree, bringing to a close summer pruning and nailing. Do not hurry in the gathering of autumn Pears and Apples. Have the fruit-room thoroughly cleaned, the walls limewashed, the shelves, &c., well scoured, keeping it cool, dry, and well ventilated.

#### FRUIT HOUSES.

**Cucumbers.**—Place out at once the plants for fruiting in winter on hillocks or ridges as near to the glass as the nature of the house and trellis will permit. Those not having the convenience of a Cucumber house may obtain supplies of fruit by growing the plants in pots or boxes in Pine stoves or other sufficiently heated structures. Let the autumn-fruiting plants be regularly looked over once a week, removing any bad leaves and exhausted growths, training in young growth, pinching out the point of the shoots a joint or two beyond the fruit, avoiding overcropping and overcrowding, and removing male blossoms. Keep the temperature at 70° by night and 75° by day, advancing to 80° or 85° with sun heat, admitting a little air whenever the external air is favourable. Keep the glass clean, as every ray of light is now of consequence. Moderate the supply of water at the roots, not, however, permitting flagging.

**Melons.**—The Melon season as regards dung-heated pits and frames may now be considered at an end. Any fruits yet remaining and fully grown may be cut and placed in a warm house to ripen. The latest plants in houses will require a night temperature of 70° and 75° by day by artificial means, advancing to 85° with sun heat, admitting a little air at every favourable opportunity. Sprinkling the paths, &c., will be necessary about 8 A.M. and 3 P.M., until the fruit is full grown, when a drier atmosphere will be advisable. Cut out all superfluous laterals, well thinning out the old foliage, so that the fruit may have the full benefit of the autumn sun. Before the ground is soaked by rains secure the required quantity of compost for next year's crop—rather strong loam taken off with its turf, stacking it grass side downwards, adding about a bushel of quicklime to each cartload in stacking it. It will be in capital condition by spring.

**Pines.**—All young plants should now be arranged so as to obtain the fullest benefit of light and air. As the sun heat diminishes a corresponding diminution of temperature should take place at night, until it reaches the winter standard of 55° to 60° at night and 65° in the daytime. Ventilate freely whenever external conditions are favourable, paying particular attention to watering. An inspection of the plants should be made about once a week, and whenever a plant needs water supply it copiously at about the temperature of the bed. Plants on which fruit is now appearing will be ripe at a time when other fruits are scarce, and should therefore be afforded a good position in the fruiting house. Continue 70° as the minimum temperature in the fruiting house, though on cold nights a decline of 5° may be allowed, and 5° more in mild weather—75° artificially by day and 80° to 90° from sun, closing the house at 85°, sprinkling as may be necessary the pathways

when they become dry, and on sunny afternoons an occasional syringing will be advantageous, keeping the bottom heat regular at 85° to 90°.

**Strawberries in Pots.**—The autumn and winter fruiting plants must without further delay be placed under glass and on shelves, so that they may enjoy a free circulation of air, ventilating so as to dispel damp, as the fertilisation of the blossom is not satisfactorily effected in a moist atmosphere. Those swelling and ripening the fruit in frames should have air moderately, and though the fruit will swell and ripen in cold frames they swell better and the flavour is enhanced in a house where there is a moderate degree of heat—50° to 55° as a minimum and 70° to 75° as a maximum by artificial means. Plants for next year's fruiting are late; they are neither so strong nor the crowns so well matured as they should be at this time of year. Those intended for early forcing should be placed on a bottom impervious to worms in frames or cold pits, exposing them fully to every gleam of sun, employing the lights only to ward off heavy rains and at night. The remaining plants should be kept in a sunny situation, as they will require every ray of sun to enable them to mature the crowns properly.

#### PLANT HOUSES.

**Greenhouse.**—*Solanums*, though not impatient of a few degrees of frost, should now be taken inside, and be assigned light airy positions. Those from the borders that have been potted will now have rooted, and must be well supplied with water or the leaves will turn yellow. See that the plants are free from aphides, otherwise the appearance of the plants will be spoiled. If plants are required early they may be forwarded by placing them in gentle heat when the berries commence colouring. *Roches falcata* when out of bloom should have the main stem cut back, removing the leaves singly from the stem with a sharp knife, and insert them singly in sandy soil in small pots near the glass. This is one of the most useful of autumn-flowering plants. Few plants are more brilliant than *Clanthus Dampieri*; but it, too, is not common. It is impatient of damp, and cold cutting winds not only check its growth but induce attacks of red spider. To grow it well a temperature slightly higher than an ordinary greenhouse is necessary with a position near the glass, avoiding overwatering, whilst allowing it to flag is equally injurious. The roots should be disturbed as little as possible, transferring from the seedling pot to the one in which they are to bloom at once. A 9-inch pot will contain a good specimen. Any plants in small pots should be transferred to a larger size with the ball entire, not removing the crocks, draining efficiently, and employing fibrous peat but sandy, with about a sixth of charcoal. The plants evidently dislike having the shoots trained upright, as after the first erect growth is somewhat advanced it emits other shoots from the base, which invariably take a horizontal course. *Salvias* require a little extra heat to enable them to develop their flowers, 60° at night being sufficient, affording weak liquid manure and a light position. The bright scarlet flowers of these enliven other plants wonderfully at this season. *Primulas* should now be placed in dry, airy, and light positions, or the plants will damp off. Supply plants advanced for flowering with weak liquid manure. *Cinerarias* delight in a rather moist atmosphere and a cool damp bottom, having plenty of room and light. *Liliums* as the growth matures should be repotted, removing all the small bulbs that are formed on the stem, potting those several together in small pots. A considerable portion of the roots of *Liliums* die annually, therefore in repotting it will be necessary to preserve the live roots as much as possible, removing the old soil. The pots must be well drained. Good fibrous loam is well suited to *Liliums*; or if the loam is not yellow and fibrous, a third part of fibrous peat may be added, and a sixth to an eighth of old manure previously dried. They should be potted rather firmly and so as to admit of 2 to 3 inches of top-dressing. Place them during the winter in a pit or greenhouse from which frost only is excluded, or they may be buried 6 inches deep in ashes in a sheltered position outdoors, taking care to remove them before growth is much advanced. During winter they should only have water to keep the soil moist.

Heaths that were potted last month will have the roots growing freely in the fresh material, and as it is next to impossible to tell when they require water by rapping the pots they must be examined carefully, and afford supplies as may be necessary. Ventilate day and night in favourable weather. The plants are all the better for being kept as cool as possible. Tie and otherwise attend to the plants, removing the old dead foliage from the wood and surface of the soil, inserting the new sticks in the places the old ones have been removed from, so as to cause as little damage to the roots as possible. Seek to equalise the growth as much as possible, and to clothe the plant down to the surface of the pot, for a bare specimen is not presentable in a collection of well-grown plants. Winter-flowering Heaths coming into bloom should have light airy positions, and not be overcrowded. Azaleas of the early flowering varieties alluded to in a former calendar should be placed in a house with a gentle heat so as to facilitate their flowering. The old *A. vittata*, so seldom seen, will flower for months, early plants flowering naturally at this season. The general stock should be examined for thrips,

washing with tobacco water any plants infested, thoroughly wetting the under side of the leaves as well as their upper surfaces and the wood, leaving the solution to dry on, which will destroy the insects and their eggs.

### TRADE CATALOGUES RECEIVED.

H. Merryweather, Southwell, Notts.—*Autumn Catalogue of Roses*.  
Robert Jenkins & Co., Rotherham.—*Catalogue of Boilers*.  
F. C. Heinemann, Erfurt.—*General Catalogue of Plants*.  
J. B. A. Delenil, Marseilles.—*List of Bulbous, Tuberos, and Succulent Plants*.

### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

BOOKS (*Mfg.*).—Brown's "Planters' Guide" contains all you mention. (*Selkirk*).—We do not know of any book such as you appear to require. Many designs for gardens have been published in our pages.

GAS-TAR WALKS (*A. H.*).—If the tar is boiled, and after being spread on the walks is covered with lime rubbish, it hardens, and the rubbish being removed a surfacing of fine gravel can be applied.

DIONÆA MUSCIPULA (*Edward Wilson*).—The leaf you sent is no doubt suffering from a surfeit of nitrogenous food. The spider being rather bulky the vessels of the leaf became charged with the decomposed matter, and assimilation not being sufficiently rapid decay of the tissues of the leaf was induced. Perhaps also your plants are not in a very vigorous condition.

PLANTING POTATOES IN AUTUMN (*G. S.*).—We have adopted autumn planting with good results, but the soil was light and the site well drained. In ordinary heavy soils spring planting is preferable. The ground being this year so cold and wet your safer plan will be to defer planting until spring. If the soil is light and of a dry nature plant early, say during fine weather about the middle of February, the sets being placed 4 or 5 inches deep; but if the land is wet and strong April planting is preferable, covering the sets not more than 3 inches with well-pulverised soil. Had you stated the nature of the soil and the varieties employed we should have been better able to have stated the cause of your failure.

CAMPANULA ISOPHYLLA (*A. Constant Reader*).—Although the species referred to by "J. B. B.," and figured on page 283, was named by the authorities at Kew as *C. isophylla* we doubt if that is the correct name of the plant. We have grown the plant as *C. garganica*, the name by which it is known, we believe, in the Cambridge Botanic Garden. We also saw it recently in the Sheffield Botanic Garden, and Mr. Swing, the experienced curator there, considers the true name of the plant to be *C. garganica*. It is increased by division or cuttings, and you are not likely to obtain seed.

ADDRESS (*M. E. H.*).—If you write to Messrs. Biddles & Co., Loughborough, you will probably obtain the information you require.

HEATING A SMALL CONSERVATORY (*E. T.*).—A petroleum stove will not keep out severe frost. A small Arnot or any simple form of portable stove would answer for so small a building if you can contrive to carry the smoke pipe outside without its being a nuisance.

OLD WALL ROSE BARE AT BOTTOM (*Idem*).—Unfasten all the upper branches, and bend them down below the point where you require new growth, which will then push forth out of the bare old branches readily enough, and when it is a few feet in length the upper branches may be cut off without risk.

SHREDS AND NAILS versus A TRELLIS FOR PEACH WALL (*A. C.*).—Let the condition of the old stone wall which you intend covering with glass be your guide. If the mortar is much broken and has many holes it ought certainly to be pointed—not merely for appearance, but from its tendency to harbour insects; and we would strain wires 6 inches apart along the wall and secure them with staples—not only to preserve the wall intact, but because the training can be done much quicker by tying than by nailing, and it is certainly more economical. The front trellis for Figs should be of iron or strained wire, 14 inches from the glass and 5 feet high. Brown Turkey and Grizzly Bourgasotte are the two best Figs for a small house.

TREATMENT OF AN OLD SHRUBBERY (*Old Laurel*).—Unless you require the space for other shrubs do not remove one of the old Laurels, but cut them down forthwith close to the ground, and they will make such vigorous growth as to become handsome specimens in a couple of years, infinitely superior to any you could plant. We have so treated several old shrubberies of both Portuguese and common Laurels with invariable success. Any new shrubs you require may be procured and planted at once.

TUBEROSES UNHEALTHY (*Chiton*).—We fear the plants grown from bulbs potted last spring, and which are now only 6 inches high, will do little good either this year or next. All you can do is to place them in a warmer house, where they can have a temperature of not less than 60° at night; the greenhouse is too cold for them. The size of pots requisite for growing *Lilium auratum* depends entirely on the size of the bulbs. As a rule pots twice the diameter of the bulbs will, with good cultivation, produce fine flowering plants.

BEGONIA FRÆBELII WITHERING (*H. H. Cross*).—If the roots of the plants are in an active state we can only attribute the shrivelling of the foliage and the dropping of the flowers to a too dry atmosphere and low temperature that have prevailed in many greenhouses during the past week or two. We saw plants similar to yours in an airy greenhouse the other day, while other plants from the same batch in a closer and warmer intermediate home were quite healthy, and continued to flower freely.

WINTERING TUBEROUS BEGONIAS (*W. A. B.*).—They may be preserved in a greenhouse where the temperature is not lower than 45°, but the soil in the pots must not be allowed to become dust dry, or many of the tubers will fall to grow in the spring. If you can plunge the pots in coconut fibre refuse or ashes, and keep the plunging material moist, it will not be necessary to water the soil in which the tubers are resting. Even with the

best care the tubers of some varieties not infrequently refuse to grow in the spring.

STRIKING BRIAR CUTTINGS (*F. G. Oliver*).—You will succeed by the mode you describe of selecting clean firm cuttings a foot long, and dividing them of all but two or three eyes at the top, and inserting firmly in ridges. The ridges should be 18 inches apart, and the cuttings 6 inches asunder in the rows, drawing the soil to them so that only the tips of the cuttings are visible. When the stocks are to be budded, level down the ridges and insert the buds as low as possible. If you could place some gritty compost in the trenches formed for the cuttings they would root more readily than in the very strong soil.

ADDRESS (*Rev. H. Bullivant*).—We never give the names of our correspondents without their permission, but we have sent your address to the writer of the article to which you refer, so that he can communicate with you if he desires to do so.

BOURSAULT ROSE (*C. R.*).—The Boursault Rose was so named when the first double variety of *Rosa alpin* was discovered, and named after a French cultivator of that name.

GROUND FOR VEGETABLES (*H. Goddard*).—Without knowing the nature of the soil, and whether you desire to have a full supply of Potatoes throughout the year, we cannot answer your question as to the precise extent of ground requisite for supplying twelve persons with vegetables and small fruits, "allowing for a good deal of company." If the soil is fertile an acre of ground, if well managed and cropped, would yield a good supply of green vegetables in season with such roots as early Potatoes, Turnips, Carrots, Onions, &c., and the usual small fruits. One man if wholly employed on that extent of ground ought to keep it in good order, if it is clean and in good workable condition to begin with.

FORCING TOMATOES (*Noctes*).—There is no pamphlet published on the subject; but if you will state your requirements, and the conveniences at your disposal for growing the plants, we shall be able to furnish you with information that may assist you in carrying out your object.

PRUNING STEPHANOTIS (*Subscriber*).—If the growths are very much crowded you may thin out a portion of them, reserving the most promising; but do not prune excessively nor shorten the growths more than needful at one operation. The soil in which the plant is growing may be kept drier in winter than in summer, but sufficient moisture must be afforded just to keep the foliage fresh; the growths will then mature, and the vigour of the plant will not be impaired.

WINTERING ALOOCASIAS AND CALADIUMS (*Idem*).—*Alocasias* should have sufficient water to keep the foliage fresh, and a minimum temperature of about 65°. *Caladiums* may be kept drier, withholding water gradually, and never letting the soil become dust dry. They should be wintered in a temperature of 60°, or not less than 55°, for many consecutive days or nights.

PRESERVING BEDDING PELARGONIUMS (*E. H.*).—We fear your chance is not good of preserving the plants, seeing that you "cannot enjoy" the luxury of glass or fire, but have cold frames and straw to cover them. You may possibly save a portion of the plants by wintering them as you propose in a hayloft, provided frost is excluded. Had you inserted in September cuttings in 6-inch pots, about five or six cuttings in each pot, and left them in the open air until October, then kept them in frames until severe weather or damp suggested their removal to the windows of your dwelling, where they could have some light and not too much heat, you might have preserved a good portion of them, which would have made moderately good plants at bedding-out time. The best mode of preserving old plants with which we are acquainted for those situated as you appear to be is to dig the plants up now and cut them down quite close to the original stem—that is, not leaving more than half an inch of the base of each branch. Trim the roots in also, cutting off all the small fibres and shortening the strong roots to within an inch or two of the base of the plant. You will then have a number of stumps not very promising in appearance, yet with care and attention nearly every stump will grow and form a good flowering plant next summer. Immediately the plants are pruned dress the wounds with freshly powdered lime to dry up the moisture, then pack them closely together in pots or boxes, employing rather moist but not wet soil, and beat it as firmly round the roots as possible. The soil being moist and compressed, and the surface dusted with loose dry soil or sand, will retain sufficient moisture without frequent waterings to induce the emission of fresh rootlets from the old roots. At the same time a number of white buds will become visible on the closely pruned tops, which in due time will form shoots. These shoots will probably be far too numerous, and should be thinned out to four or five on each plant. Any dark frost-proof place will do for the boxes of plants until some growth is made, when light becomes necessary. The cooler they are kept the better in early winter, so as to retard growth as much as possible until the severity of the winter has passed, and when the boxes can be placed in frames and protected. The plants if potted and grown on become dwarf and bushy, and, although later than young plants, floriferous. We have seen many hundreds of plants wintered successfully in the manner described.

PEAR CRACKING (*Mr. C. W.*).—The fruit cracking is in most instances due to the unfavourableness of the climate, the cuticle of the fruit being injured by inclement weather, and also often occurs when the trees make too much growth which does not ripen. This may to some extent be obviated by root-pruning or lifting the trees, but when it arises from climatic conditions there is no remedy, although trees that have the fruit cracked when standing unprotected, often overcome this fault when planted against a wall. Except in warm situations in the southern counties Glou. Morvan requires a wall.

BORDER FOR PEACH TREES (*Idem*).—The subsoil being unfavourable the border should not only be laid with stones, but the joints should be cemented, the border having a good fall from the wall to the front, where there should be a pipe drain to carry off superfluous moisture. The border should be drained with brickbats or rubble 9 inches deep upon the flag, and have 21 to 24 inches depth of soil. For particulars of making the border see "Work for the Week."

BLACK HAMBURG GRAPES INDIFFERENTLY COLOURED (*Idem*).—The most probable cause of the Grapes not colouring is overcropping, though it may to some extent have been affected by a deficiency of ventilation when ripening, but the most likely cause is too heavy a crop.

STRIKING CONIFERS (*Constant Reader*).—Such small sprays as those enclosed will not strike so late in the season under handlights. You might try cuttings somewhat larger and firmer, inserting them in sand, and a few of them may, perhaps, emit roots. The evergreen is, we think, *Andromeda angustifolia*.

**NAMES OF FRUITS (J. N.).**—3, Adams' Pearmain; 3, Dunelow's Seedling; 5, Ribston Pippin; 6, London Pippin; 7, Court of Wick; Benrre Caplaumont Pear. (E. B. Croxdon).—Sousvenir du Congrès. (A. Z.).—The Apple is Ravelston Pippin, and the Pear Dunmore. (H. O.).—*Nectarines*: 1, Rivers' Orange; 2, Newington. *Peaches*: 1, Royal George; 2, Early Anne; but we cannot be certain about the names, as we do not know the character of the flowers. *Pears*: 1, Williams' Bon Chrétien; 2, not known. (Eim).—1, Diamond; 2, We cannot determine without shoots or stalks; 3 quite decayed; 4, Jefferson; 5, Victoria; 6, Ickworth Imperatrice. (K. G.).—We do not recognise the Apple in its present state. (A. T.).—Fondante d'Automne.

**NAMES OF PLANTS (F. E. H.).**—It is the double form of Soapwort (*Saponaria officinalis*). (J. R. Boyd).—We have not received the flower to which you allude in your letter. (C. A. R.).—The white flower is *Pyrethrum uliginosum*; the other resembles *Helianthus multiflorus*. (A. C.).—1, Myrica Gale; 2, Rhus cotinus; 3, Acanthus mollis; 4, Funkia subcordata; 5, Yucca filamentosa; 6, Ribes aureum. (S. H. Bristol).—1, Escallonia macrantha; 2, Selaginella cuspidata; 3, Specimen insufficient; 4, Francoa ramosa; 5, Tradescantia Warscewicziana; 6, Selaginella Willdenovi; 7, Begonia lucida. (Vinc).—Hydrangea japonica.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### CULTIVATION OF WINTER BARLEY.

WINTER barley has long been an important and useful green fodder crop, and is grown in various countries on the Continent, more particularly in Russia and other states where the climate and soil are not adapted for the growth of the best varieties, and for spring sowing, where the grain is required for malting purposes. It, however, is not used for meal purposes, and in those latitudes where wheat is not grown winter barley, called "Bere" and "Bigg," forms a considerable portion of the food of the people, more particularly of the working classes. It makes but coarse bread, not equal by any means to that made from wheaten flour. This kind of barley is constantly imported into England, and is usually sold by the corn merchants at a low price for meal purposes, and the price at which it can be purchased is the cause of its being used largely for mixing with other grain, such as maize, in the feeding of cattle and pigs; it is also used mixed with oats for the feeding of cab horses, &c. Winter barley is, however, when grown by the home farmer valued chiefly as a green fodder crop in admixture with winter vetches, and for this purpose it has no equal, rye being too forward in its growth for mixing with vetches.

There are several varieties of barley in cultivation for fodder purposes. The White Winter barley, called "Bere," is, however, most commonly sold in our markets, and as we propose to describe the varieties separately we will take the white one first. This grain is of a thin elongated shape, with a very strong and tough awn, which makes it difficult to detach from the grain, and the grain weighs lighter in consequence, but as it is mostly grown for green fodder the actual weight per bushel is not of very much importance. The ears of this grain are of the cluster or square-headed shape; the straw is long and reedy, and is extremely well adapted for holding up a crop of vetches when they would otherwise lodge on the ground, in which case a portion of the crop would be discoloured at the bottom, and become distasteful to the sheep as well as cattle or horses. If the mixed crop is saved for seed, which is often done, the barley, by holding the vetches off the land, is very favourable for the podding of the vetches, and frequently when grown and threshed together yield a large crop for sale in the mixed state, and in this way it commands a ready sale for the home farmer. The object of mixing barley with vetches is also to protect them in the winter; and although the barley tillers out very much it does not leave the land so early as rye, yet it answers the purpose admirably as a shelter for the vetches. It is greatly in favour for that purpose upon the vale farms, where the mixed crop is required for large flocks of sheep and herds of cattle, &c., in the months of May, June, and part of July, after which time the summer vetches come in for use, and winter barley may also be sown with them in the spring, not only to hold up the crop, but because this mixed crop will keep longer in condition for feeding stock, for the winter barley will not grow so fast and overpower the vetches as oats are apt to do when sown in the

spring. This is a matter of importance when the green fodder can be held on to a later period, besides summer vetches are very subject to blight, particularly in a dry hot summer; but the effect of the winter barley when grown with them is to keep the land moist and otherwise prevent the vetches from being attacked by fungi called the red rust, or blight as it is commonly termed. This variety of barley grows well upon poor sandy or gravelly land almost as well as rye, but it certainly produces a much greater bulk of straw upon the mixed soils of vales. It is so much in demand for sowing with vetches that there is always a ready sale for the grain when a crop is saved for seed, for it becomes fit for harvesting almost as early as rye, and may be treated during growth in the same way. It should be drilled with about two and a half bushels of seed per acre, or three bushels if sown late, which quantity will be ample for sowing the land, as it tillers so much more than rye; but it is well to drill the seed at about 12 inches between the rows, in order that the land may be hoed in the spring if weedy.

This crop, if saved for seed or mixed with vetches, should be sown about the middle of the month of October, and the preparation of the land is very simple, for it is usual to plough up a wheat or other corn stubble, work down and drill the seed; it is, however, not necessary to work the surface of the land very fine, but it should be left rather cloddy than otherwise, as the land and the crop then take the alternations of winter weather without injury. If the land is in poor condition or foul it should be autumn-cultivated and cleaned, and also receive about 2 cwt. of Peruvian guano sown broadcast immediately behind the drill and harrowed in. Whether the crop is saved for seed or used as green fodder it is essential that the land should be clean, in order that the succeeding crops may take better, as it is customary to grow turnips after the crop has been removed as green fodder, and, like rye, it may be followed by stubble turnips where the crop is reserved for seed. There is always a good demand for the seed, but the home farmer will always find it turn to good account for meal purposes, with which to feed his cattle, sheep, or pigs. It is also a safe crop to grow as regards the yield per acre, for when the land is in good condition the bulk of straw will be very great as well as the produce of corn, for the straw being so stout and strong that it seldom becomes laid or lodged. It ripens very early, and is not subject to blight like some other cereals, and the ears of corn being square and plump the yield per acre at harvest is generally found to exceed the estimate.

The next variety of winter barley we have to notice is the black grain, called "Bigg." This had its origin in Russia, and is grown there in the coldest districts, and is therefore exceedingly forward in growth, and very quickly ripens its grain. This variety of winter barley is not very common, but samples occasionally are met with. We first grew it in the year 1827, at which time we obtained a sack of it for trial from Peterborough in Northamptonshire, and it proved what it was recommended to be—a very hardy plant, and capable of standing the severest winter. The grain is of the same size and shape as the white variety, and the ears of corn are of the same character, but instead of lying about and tillering on the ground the black barley rises from the ground. It is even earlier in its growth than rye, with very strong succulent straw and a broader leaf than any other green fodder crop, and is therefore admirably adapted for sowing on the hill farms, where large flocks of ewes and lambs are kept as a breeding stock; particularly on farms where there are no water meadows, because it not only comes earlier than rye, but produces a more bulky crop. It is rather too early in its growth for sowing with winter vetches upon good land on the vale farms; but upon the hill districts of poor thin land, and especially in exposed situations, it proves a valuable protection for the vetches in the winter months, and is also extremely well calculated for sowing with summer vetches in the spring, because it grows so quickly and is so strong and reedy in the stem that it holds up the heaviest crop of vetches which can be produced. In saving this crop for seed it should be drilled, and at the same width as before stated for the white barley, and in our experience we have found it yield a full crop of corn, and rather in excess of the white variety. As the black barley does not tiller out, but grows more hollow at bottom, it offers a capital opportunity for sowing with clover and other grasses, for when the corn is cut, it being so early, it may be cut above the clover, as we often do with early white oats, in which case in ordinary seasons we are sure of a good cutting of clover for soiling cattle and horses until the latest period when frost commences. The seed is not very easily obtained, but we have lately seen a bulk selling in a local market, and it was quickly bought up for seedling with winter vetches on the chalk hill farms, the price made being 6s. per bushel.

#### WORK ON THE HOME FARM.

**Horse Labour.**—The preparation of land and sowing of wheat will now engage the farmer's chief attention. Many farmers advocate the sowing of wheat before the 14th of October, but that applies to the cold and heavy soils and to the backward districts as regards climate. In the southern and eastern counties, how-



ever, it is well to defer the sowing of wheat until the last week of October and the first fortnight of November. In a backward harvest like it has been this year all the usual work on the farm has been in arrears, such as sowing trifolium, rye, winter vetches, &c., so that little cleaning of the stubbles has been done this autumn, and it is too late now to commence that work; therefore, entire attention will now be centred in the wheat season. In last week's "Work" we named some of the best varieties of wheat, both red and white, but we must now call attention to the question of change of soil as well as selection. The question of pedigree, too, is well worth attention, for it has been proved by Major Hallett that there is as great advantage in selection and propagating from the best specimens of cereals as there is in the raising of cattle from the best animals, thus proving that like begets like in either case. It is well, therefore, for the home farmer to consider that after having decided upon the best variety of wheat adapted for the soil and climate of which he has the management the propriety of endeavouring to obtain a pedigree sample for seed of the sort which he intends sowing, and if possible to get it from a district which shall be a change of soil and climate. It is time now that all the yard or town manure intended to be laid out upon the fallows should be completed. We fear, however, that upon some farms, unless we get a change to settled dry weather, the land will be too wet for carting out manure at all upon fallowed land; it will then of course be laid out upon the clover leas, as that work may be done should the weather prove showery. It must, however, not be thought that we wish the fallows to be sown without manure; but to illustrate our recommendation upon the subject we will state our plan pursued in the seed time of 1872, which was one of the worst we can recollect for many years upon strong soils that are usually sown after a fallow preparation. Upon that occasion we had about forty acres of fallow to be sown with wheat upon a farm under our agency. It was a loamy soil upon clay, and as the land was too wet for the ordinary mode of proceeding we opened two furrows for a veering throughout the fields. This not only laid the land drier by taking away the excessive rainfall, but it enabled us to sow the 8 cwt. of Peruvian guano per acre which we used by sowing broadcast between the veerings just before the ploughing day; and in this way we not only avoided giving the land a double dressing in the centre of the ridges but buried it under furrow, so as to benefit the corn immediately it vegetated. As fast as the land was ploughed the wheat was sown by hand broadcast, and harrowed-in one or two times with the iron harrows, the horses going in the furrows, and thus the sowing was completed as fast as the land was ploughed; and we venture to recommend this plan as the only available method in a difficult season, and upon fallow land when manure cannot be carted on to it.

**Hand Labour.**—Men may now be employed with advantage in going over the pastures with the scythe, cutting off any patches of rushes or coarse grass refused by the cattle, for if the winter proves mild the young grasses which will spring up will be easily eaten by the cattle. If rushes and coarse grasses are left during the winter they are sure to prejudice the growth of the better herbage in the spring. We know cases in which such-like coarse grass, sedge, rushes, &c., are carefully reserved when they can be got into stack dry and cut up with straw into chaff for dairy cows in the winter, and it answers a good purpose by making the straw more palatable, and is more readily eaten by the cattle. It is, however, by the best managers connected with pulped roots, cake, or meal. The shepherds will now have to pay attention in the feeding of the ewes, for in all the districts where Down sheep are kept the ewes will have been served and the rams taken away from them by this time, and they should be cared for accordingly, by having at least two changes per day of grass—such as old lea or saintfoin lea—with a fold of mustard or similar food in moderate quantity at night. The long-wooled ewes will still have the rams with them, and should in consequence be kept well with a more generous diet, with changes of food from pasture to arable produce daily. A liberal dietary will at lambing time give a larger number of twin lambs; and to show the difference of the lambing periods of different districts the horned Dorset and Somerset ewes usually kept in the home and southern counties, and just arrived at their new home from the early fairs, will begin lambing immediately. These ewes will require good clover grass and stubble grass feeding both before and after lambing; and as they usually finish lambing by the middle or end of November, the ewes do not require a lambing fold like the Down sheep which lamb two months later, but they should be kept at night in a fold upon dry pasture or old lea on a sheltered spot, to enable the shepherd to visit them at night time and take care of the lambs as fast as they fall.

## WEST VIRGINIA AS A FIELD FOR EMIGRATION.

FOR some months past there have been many suggestions as to the best ways or means of treating the present depression of the farming interest in this country. I beg to draw the attention of your readers who contemplate a change in their occupation as tenant farmers and others to South-west Virginia, one of the healthiest

positions in the United States. The heat in summer is much less than that of Texas; and the winters, in place of being oftentimes 20° below zero, as in the north-western States, seldom reach freezing point in South-west Virginia. The lands are situated within three hundred miles of the Atlantic seaboard, and the price per acre does not exceed 4s., at which cost they would obtain their own freeholds. The streams abound in fish; the scenery is beautiful beyond description, and there is railway communication with all the great cities of the Atlantic coast, comprising New York, Boston, Philadelphia, and Baltimore, and the great inland cities of Chicago, St. Louis, Cincinnati, Louisville, and Richmond. Coal, iron, and other minerals are in abundance, and the climate is unsurpassingly fine with clear bright skies. I shall be glad to give any further particulars concerning these lands.—EDWARD BREWIS.

## FORTHCOMING POULTRY SHOWS.

WE have before us a number of schedules of forthcoming poultry shows. The fourth Columbian and Bantam Show will be held at Southport in the Winter Gardens on October 29th and 30th. The classification for Pigeons is the most complete we ever remember having seen. There are 105 classes in all, comprising six for Pouters, ten for Carriers, twelve for Barbs, sixteen for English Owls, &c. The classes for Bantams are fifteen; we regret to see that no encouragement is given to the rarer varieties. There are ten point cups and fifteen other cups offered. The great feature of the Show is that it is only open to amateurs.

Birmingham continues much in its old groove. The Dorking cups and prizes seem year by year reduced; the result is that the grand collections of that breed once to be seen in Bingley Hall are by no means equalled in these days. Langhans have two classes with four prizes in each, the first prizes being 4s. If fanciers of other varieties were as liberal as those of Langhans the prize list might be a better one. Polish still have separate classes for adults and chickens, but Hamburgs are mixed. Ducks are well off; there are separate classes for Pekins, Cayugas, Mandarins, Carolinas, and Call Ducks, besides the usual varieties. There seem hardly any changes in the Pigeon classes. We miss the name of Mr. Bailey from the list of Judges; doubtless he has claimed a well-earned exemption from the labours of Judge, after having officiated at every Show since their establishment thirty years ago.

The Rutland Agricultural Society's Exhibition will be held at Oakham as usual on November 26th and 27th. Its schedule is on the whole much the same as in former years, though in some classes the prize money has been much reduced.

## HOW TO FOUND A ROOKERY.

IN answer to the question that has been asked in your columns as to the best means of founding a rookery, I can mention an instance in which a large one was established by the kindness shown to a solitary Rook one severe winter. For many years it had been our great ambition to have a rookery; there were several large ones in other parts of Cheshire, and what was considered to be the mother rookery was about two miles from us. The keeper had obtained Rooks' eggs, placed them in nests in tall trees thought likely to attract them, but all to no purpose. But one severe winter there came regularly every day, with some pet Bantams that were fed by the housekeeper out of the window, a solitary Rook and fed with them, becoming at last so tame as to hop on the window sill. In the spring this tame Rook brought a mate, and together they began to build in a small Spanish chestnut tree, so close to the house that from the upper windows we could see quite into the nest. It made great excitement watching the progress of this nest, as it is considered to bring good luck to a house when Rooks build near it. The nest was about half finished, when, one morning, a great noise was heard, and we saw about a dozen strange Rooks violently attacking the old pair, and tearing the nest to pieces. They did not attempt to build again that year, but the next spring the same thing occurred. They got so far as to lay their eggs, when the female bird was suddenly attacked one morning when she was sitting by a dozen and more of Rooks, and the noise was such as to collect the whole household to watch the battle. She made a stout defence, and it was some time before they beat her off the nest, dashing it with its contents to the ground. This was repeated a third year, when we began to despair of having our rookery, but on consulting a book on natural history we found it stated that it was generally four years before a pair were allowed to establish themselves independently from the mother rookery. At all events it was so in this case, for the following year they not only brought up a brood of young birds without being molested, but each year after the nests in the same tree increased in number, and eventually they spread to other trees close by. It was so far satisfactory to have established our rookery, but unfortunately, the grateful Rook had chosen the nearest tree to the window where he had been fed, and their close vicinity to the house proved at last so objectionable that it was found necessary to drive them further off, by gradually cutting down the trees they had chosen. With the curious

instinct that Rooks are supposed to have with regard to trees that are destined to come down, though they were left in peaceful possession of the original tree they had chosen, and which had nine nests in it, they wisely left it, and established themselves in a clump of large trees at a more convenient distance. Every year after this the rookery increased in size, and in the space of ten years from the time the parent birds made their first attempt to build, the rookery has grown so large that we have been advised to shoot some of them in the spring, for fear the Rooks, "becoming too numerous" should fight and break up the colony.

This is only one more instance of the power of man over animals, and shows that the secret of that power is kindness.—*Mrs. TILT* (in *Science Gossip*).

### VARIETIES.

"HARVEST work," says the *Agricultural Gazette*, "is still far from complete in English midland counties, and has been little more than begun in many an upland corn-growing district in the north. Although the dry weather of the last few days has been most serviceable it has come long after the ordinary termination of the harvest season, and it is not too much to say that hardly any corn was carried in the month of September in all Scotland. Potatoes, which are such a resource on most Scottish farms, are but an uncertain prop in this most disastrous year. During a recent run through Fifeshire we heard of instances in which the crop had been sold for £40 an acre; but, more generally, there was hardly the 'seed' again as a return. Where the land was free and dry the produce was, to all appearance, both safe and good; where clayey, wet, and cold it was either ruined by disease or had never got beyond the size of 'chats.'"

—We are requested by Mr. C. Cashmore to state that, although his name was attached to the protest relative to the contest of incubators at Hemel Hempstead that appeared in our advertising columns, such protest was published without his knowledge and consent.

—THE fourth annual Show of the British Dairy Farmers' Association commenced at Islington on Monday, and will remain open until Friday night. The Show is a very large one, the total number of entries being two hundred in excess of last year, and it is satisfactory to note a slight increase in the number of cattle—247 as against 232. In addition to the cattle there is a large exhibition of goats, butter, cheese, dairy utensils of every description, models of dairy buildings, and a show of poultry. The butter, cheese, and dairy utensils occupy the centre of the ground floor, the cattle being ranged upon each side, while the goats and kids are placed in the southern corner. The exhibits are well arranged, and the Show is a successful one.

—CANADIAN POTATOES.—A letter from Canada received by a merchant in Newcastle-on-Tyne states—"After all the fears about the potato bug our crops of potatoes are excellent; those grown on high and well-drained lands are in a fine condition. Large quantities are being shipped by steamers to England. The prices realised in Canada by the farmers are only 6d. a bushel. A bushel is about four imperial stones, English weight." Considering the reputable high rate of wages in Canada we can scarcely understand how the crop at the price quoted can pay for digging and leave a margin of profit for the cultivator.

—As an instance of the lateness of the season we may record that less than a week ago we observed in the neighbourhood of Chesterfield several acres of grass that had only just been cut in the hope of converting it into hay, this being the first cutting of the season. Several fields of corn, both wheat and barley, were quite green, and it is quite impossible that the grain can ripen.

—SPECULATION IN AMERICAN CHEESE.—After a long period of depression the market for one description of American provisions, that of cheese, has undergone a change which is perhaps unprecedented. In a space of five weeks the value of the article has risen from 80 to 100 per cent. It appears that the late spring in America had the effect of materially reducing the make in April and May, and the ground thus lost has never been recovered; and finding this to be the case one large cheese merchant in Liverpool promptly went into the market and bought up all the cheese that could be obtained. The sudden demand caused a rise in price; but as the summer in America has been exceedingly hot, and has had the effect of burning up the pastures, the fall make of cheese proves to be less than it has been for some years past, and as all the cheese imported is practically in the hands of this enterprising speculator he will probably be able to force prices up to a point still higher than they have at present reached.

—SUBSTITUTES FOR POTATOES.—We are threatened with something like a potato famine, and those who remember the similar disaster of 1846 do not need to be told how grave is now the prospect, with a vastly increased population, and a state of depression in trade which signifies on the part of the masses a great difficulty in providing even the commonest and cheapest necessities of life. Many and well-intentioned are the suggestions which are being made with the view of providing substitutes for

the potato. The French haricot blancs or flageolets, lentils, rice, maize, and oatmeal are the substances which are brought most prominently forward as being fit to replace the favourite tuber. In one respect—the quantity of nitrogen which they contain—they all, but especially the leguminous examples, greatly surpass the potato as an economical nutriment, but unfortunately they are all deficient in antiscorbutic elements. Under a diet of these substances, either alone or with the trifling amount of fresh animal food which is all that tens of thousands of persons can obtain, scurvy would be as rife as it was in Ireland and North Britain in 1846-47. Nevertheless, all these foods are very valuable, and it only needs that the particular point in which they fail should be recognised and supplemented. If this be not done disease must ensue and the nutriment fall into disfavour. Any of these substances may be used with advantage where either an abundance of milk forms part of the dietary or the antiscorbutic element can be furnished by fresh green vegetables, onions, or the juice of oranges or lemons.—(*Lancet*.)

### FOUL BROOD AND ITS PREVENTION.

I HAVE read with much interest the exhaustive paper on "Foul Brood" with which we have been favoured from the pen of Mr. Cheshire, whom all the apian readers of this Journal will welcome as a contributor to its pages. The account he gives us of this horrible and infectious disease, which he seems to think is spreading rapidly in this country, is enough to make all bee-keepers quake with alarm. For although he gives us a remedy, which, from the experience of his friend Mr. Cowan seems to be a specific, it is perfectly certain that none but the very few will ever have recourse to it. These few will be found scattered up and down the country at considerable distances, including the scientific, the amateur, and the commercial bee-keeper. But among the great mass of cottage bee-keepers scarcely one in a thousand will take the trouble to doctor their infected hives, and so the disease will spread practically unchecked through the length and breadth of the land. Hitherto, I am thankful to say, my own apiary has escaped the plague, nor, indeed, as yet have I come across a single case of foul brood in all the forty years I have been a bee-keeper, and I think it is as much a stranger in this part of Somersetshire as in any part of England. We all remember the experience of our lamented captain, Mr. Woodbury, in Devonshire, who had it among his hives again and again, and the great trouble he took to get rid of it, sometimes at the cost of breaking up his most valuable hives.

Seeing, then, the impossibility of successfully coping with the disease if it once gets the footing among us which Mr. Cheshire seems to fear, the question arises, How far it is possible to check its dissemination? And it is in the interest of prevention that I now write, which all men have agreed to believe is "better than cure."

First, one would like to know whence the disease came. I have always thought that it came from abroad, and that the invasion of the plague was synchronous with the importation of the Italian breed of bees. Is this a mere fancy, or is it a fact? I think it will be found that it appeared in America, and probably in Germany, at the same time these foreign bees made their appearance in those countries. If so, it behoves all importers of Italian queens to be very careful to avoid the introduction of any such from apiaries which may be infected. There should be some guarantee, founded on personal experience gained on the spot, that none are brought into England which are not warranted to have come from perfectly healthy bee farms.

All readers of Virgil's fourth Georgic will remember his graphic description of the plague which visited the apiary of Aristæus—

"Amisiss, ut fama, apibus morboque fameque."

We may be sure that the poet did not draw upon his imagination only, but that he was describing probably some visitation from which his own bees had suffered, over which he mourned himself, though in the name of another. What was this disease but foul brood? If so, no wonder that Italy should be now the focus of the mischief, and that every consignment of queens from that country is but spreading among us more and more fatally the complaint we dread so much. Yet I do not think that we should have to apprehend much danger from imported queens and the few bees that accompany them, provided that no comb save perfectly fresh virgin honeycomb was introduced with the bees into the little boxes in which they travel. Surely this could be made a *sine qua non* with all who are engaged in the traffic. A condition of payment should include what I suggest. In this way the chance of germs of the micrococcus finding their way in future into this country would be reduced to a minimum.

So far so good, but what of the disease actually domiciled among us? How are we to guard against its dissemination? For my own part I am fully resolved to introduce no bees from any quarter whatever into my apiary unless I am sure of the quarter from whence they come. I expect that this winter will find half the apiaries of England empty. If so, let us hope that there will also be a stampede of foul-brood germs. But with the coming spring those apianians, young or old, who have not given way to despon-

dency will be buying hives and swarms in all directions wheresoever they may have survived. It is not unlikely there will thus occur a distribution of bees all over the land, calculated to do infinite harm if not wisely managed, by spreading the infection far and wide. Therefore, let every purchaser of bees next spring take double care to ascertain that foul brood is not imported from any quarter by a careless introduction of stocks or swarms. Let all he buys be warranted to be sent from a pure and healthy locality unknown of the disease. If possible let him see to this himself.

By these simple means I should hope that in a few years this plague would become as rare as cholera now is among ourselves. Meanwhile we thank Mr. Cheshire with all our heart for directing attention to the matter. Let everyone who has reason to dread the fate of Aristæus use the remedy now recommended, which seems to be efficacious; but above all things let him, if possible, guard against its coming within his knowledge at all. I shall certainly adopt the recipe for autumn and winter feeding which Mr. Cheshire recommends. It should now be speedily administered. —B. & W.

### THINGS KNOWN AND THINGS UNKNOWN.

It is known that late hatches of brood can be obtained by continued vigorous artificial feeding, but probably nobody dare assert that the production of eggs at a late or untimely season affects the fertility of a queen for early work in the spring following. Naturally and by analogical reasoning some think that six months' rest or cessation from egg-laying would be better and more healthful for a queen bee than four months' rest. This is an old question which in our opinion has never been satisfactorily settled. Though we have not made carefully marked experiments on this point, observations have led to the conclusion that egg-laying caused by stimulative treatment late in autumn does not weaken the productive powers of queens for any length of time.

The question of increasing the fertility of queens by feeding stocks with candy cakes, which are made of peameal, sugar, and water, was prominently noticed in this Journal last spring. The novelty of this idea and that of queens being fed with half-digested food from the stomachs of working bees pleased many apiarians at the time. Though the past summer has been very unfavourable for experiments in the apiary as well as for honey-gathering, some who tried the candy cakes and barley bannocks may be able to give us their opinions as to their worth. If it be proved than when used as food for bees queens commence to lay, their use at certain seasons cannot be too strongly recommended. The statement about queens being fed on half-digested food is a most interesting one, presenting to the minds of thoughtful apiarians a new and economic feature of bee life. The honey bag, used as a reservoir, filled and emptied with facility at will, is a most important and interesting instrument and organ. We are told by those who write on the anatomy of the bee, that from the honey bag "the food may either be returned to the mouth or pass into the true stomach just below. The honey when it is taken from the flowers is stored in the honey bag until the bee reaches home. In that organ it appears to undergo a change, which gives it the peculiar opacity and consistence so characteristic of good honey. In fact, the honey bag performs much the same functions in the bee that the ruminating stomach does in the cow. At the lower part of the honey bag the valve is seen which admits the food through a short neck to the true stomach. This is a cylindrical organ, increasing in diameter slightly after leaving the honey bag, and bound by innumerable muscular rings. When the food has reached this point it is beyond the control of the bee, and cannot be regurgitated." If this statement is correct it is antagonistic to the hypothesis (if it is a hypothesis merely), that queens are fed with half-digested food from the stomachs of the working community. Neither view is without difficulty. Evidently much remains unknown, but future research will probably bring truth into full view and confidence. —A. PETTIGREW.

### OUR LETTER BOX.

**DUCKLING PARALYSED** (*Mary Jones*).—There is no known remedy. Give it only soft food. If it survives and becomes large enough for being eaten the affection of the head need not prevent its being so used.

**BEES FIGHTING** (*H. P.*).—Move one of the hives far away from the other. An old writer says—

"A little dust cast up on high,  
Doth end the quarrel presently."

**DEAD BEES** (*Busy*).—We have examined your parcel of dead bees, which appear to be the ordinary British bee, certainly not Ligurian. They look like the usual type of bee which has recently died from natural causes. There is no foul smell about them, nor any reason to suppose any special cause of death except it be starvation. We should like to know something of your mode of feeding and the quantity you have given them, as we suspect they must have been fed inadequately. Try what an immediate and liberal supply of food will do for the survivors, if any of them are yet alive. There must certainly be something wrong in your method of feeding to allow of any being "stuck in the thicker syrup," and requiring to be brought to active life by being "sprayed over with warm water." Your shed seems unobjectionable. Of course, when the shutter is on there are holes in it corre-

sponding to the entrance holes of the hives, by which the bees can make their exit?

**PARAFFIN FOR COMBS** (*G. T. Ashton-under-Lyne*).—Paraffin does not answer for combs. The quantities of it that are soft enough to enable the bees to work it into comb melt at too low a temperature to stand the ardent rays of summer. Wax melts at 160° Fahr., and it is tolerably tough at only a few degrees lower than its melting point. Mr. Root of America stated paraffin to be a success before he had really given time for a fair trial. Bees may be quite successfully kept in the top of a house, but efforts should be made to screen them from all driving winds. The mere height from the ground would not give them trouble, for, as an American somewhere says, "bees having wings can get over a very high fence."

**FOOD FOR BEES IN FOUL-BROODY DISTRICTS** (*F. J. Cork*).—Salicylic acid is a white light powder. It is better to deal with the acid itself than buy any solution of the chemist, as the strength of such solution being unknown you are without certain guide as to quantity to use. The price of the acid is about 1s. an ounce, and the readiest way to employ it is to throw the powder into the making syrup while it is on the fire, a small teaspoonful, as we stated in last issue, being sufficient for 14 lbs. of sugar. If you make according to Mr. Cowan's recipe, 1 oz. of the solution (which is only one part in eighty-two salicylic acid (see October 2nd) and contains therefore rather less than 6 grains), is added to 10 lbs. of sugar. Salicylic acid is not poisonous, but it is not desirable to use more than enough; and as you are only intent on guarding against a possible outbreak we should suggest half a teaspoonful (15 grains) of the dry acid as being amply sufficient for 14 lbs. of sugar.

**COMBS HEALTHY OR NOT** (*P. McArthur, Mangfield*).—The piece of comb sent us is perfectly healthy. The drone it contained was completely developed, whereas had it died from the effect of micrococci its remains would have been brown, foetid, and viscid. Why did you suspect foul brood in this specimen which contains nothing to indicate it? Because this specimen is healthy, however, it does not of necessity follow that the hive is nowhere tainted, but the presence of disease we should consider highly improbable. The American-made sections can be had of Messrs. Neighbour, 149, Regent Street, while several English makers advertise their own.

**PRICKLY COMFREY** (*E. C. O.*).—*Symphitum asperum* is the species employed on farms for cattle-feeding purposes. It was introduced from the Caucasus in 1799. It is cut and given to the cattle in a green state, or partially withered, and in rich, deep, and rather moist soil it yields very large crops of produce. Divisions of the roots may be planted 3 feet apart, from November onwards, in well-enriched soil; indeed, the preparation of the soil and mode of culture usually applied to rhubarb are precisely suitable for the prickly comfrey, which is quite hardy. We do not know whether hares or rabbits eat the plants and do them injury. Perhaps some of our correspondents can inform us on this point.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 38' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1879. Oct.	Baromet. at 39 feet above Sea Level	Hygrom- eter.		Direction of Wind.	Temp. of Air at 5 feet	Shade Tem- perature.		Radiation Temperature.				
		Dry.	Wet.			Max.	Min.	In sun.	On grass.			
We. 8	Inches. 30.498	deg. 59.3	deg. 51.6	N.	deg. 54.3	deg. 59.0	deg. 47.5	deg. 67.5	deg. 50.3	In. —		
Th. 9	30.505	50.3	47.6	N.	54.0	55.3	45.3	66.3	46.0	—		
Fri. 10	30.465	44.3	44.3	N.	53.5	58.3	37.3	56.9	34.3	—		
Sat. 11	30.586	45.7	45.7	N.W.	51.5	55.5	36.7	58.0	35.6	—		
Sun 12	30.561	45.5	45.0	N.	50.8	50.5	48.5	58.5	37.5	0.019		
Mo. 13	30.432	44.5	44.5	W.S.W.	50.5	51.3	44.0	60.6	45.6	—		
Tu. 14	30.513	45.5	45.5	W.	50.7	54.3	44.0	61.2	45.4	0.013		
Means	30.490	47.0	45.4		53.1	55.3	45.1	60.6	40.7	0.025		

### REMARKS.

8th.—Cloudy day, scarcely a glimpse of sunshine.  
9th.—Cloudy; generally overcast throughout the day.  
10th.—Foggy in first part of morning, and cool; cloudy till 5.30 P.M., then clear and fine; nearly cloudless at night.  
11th.—Very foggy morning, sun shining through mist in forenoon; foggy in afternoon and part of evening.  
12th.—Dull, overcast, and rather thick throughout the day; damp fog at 10 P.M.  
13th.—Slight fog in morning; fair but dull day.  
14th.—Misty morning, overcast until 2.30 P.M., little sunshine for short time, and finer afternoon and evening; gusty shower of wind and rain 8.45 P.M.

Much colder, and noticeable for very high barometer; much fog, but very little rain. On several nights the temperature upon the grass has been warmer than in the air; this occurs when the ground is relatively warm, and when radiation is stopped by fog or cloud.—G. J. SIMONS.

### COVENT GARDEN MARKET.—OCTOBER 15.

We have no remark to make this week beyond stating that now the soft fruit is nearly finished our market has settled down to a quiet business, prices of all classes of fruit being with difficulty maintained.

### FRUIT.

		s. d.	s. d.			s. d.	s. d.
Apples.....	1 sieve 2 6 to 3 6			Nectarines ....	dozen 2	6 to 6 0	
Apricots.....	dozen 0 0 0 0			Oranges .....	100 4 0	12 0	
Cherries.....	box 0 0 0 0			Peaches .....	dozen 2 0 0 0		
Chestnuts.....	bushel 12 0 16 0			Pears, Kitchen....	dozen 0 0 0 0		
Figs.....	dozen 1 6 3 0			dessert.....	dozen 2 0 4 0		
Filberts.....	1 lb. 0 4 0 0			Pine Apples .....	1 lb. 3 0 6 0		
Cobs.....	1 lb. 0 7 1 0			Plums .....	1 sieve 2 6 4 0		
Gooseberries....	1 sieve 0 0 0 0			Raspberries .....	1 lb. 0 0 0 0		
Grapes, hothouse	1 lb. 1 6 4 0			Walnuts .....	bushel 14 0 16 0		
Lemons.....	100 8 0 12 0			ditto .....	100 0 0 0 0		
Melons.....	each 2 0 5 0						

## WEEKLY CALENDAR.

Day of Month	Day of Week	OCTOBER 23—29, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.			
23	TH		58.2	39.8	49.0	6	39	4	52	3	30		morn.	8	15	24
24	F		56.3	39.6	47.9	6	41	4	50	3	37	0	21	9	15	33
25	S		55.9	38.5	47.2	6	43	4	48	3	52	1	25	10	15	41
26	SUN	30 SUNDAY AFTER TRINITY.	55.6	36.5	46.1	6	45	4	46	3	6	2	47	11	15	48
27	M	Sale of Nursery Stock at Chertsey.	55.1	38.4	46.7	6	46	4	44	3	21	3	57	12	15	55
28	TU		54.5	35.9	45.2	6	48	4	42	3	36	5	7	13	16	0
29	W		54.0	35.7	44.8	6	50	4	40	3	54	6	16	14	16	6

From observations taken near London during forty-three years, the average day temperature of the week is 55.7°; and its night temperature 37.5°.

## APRICOT BRANCHES DYING.

**T**HE Apricot being one of our most useful fruits either for dessert, kitchen, or preserving, a fair share of attention is naturally devoted to it in most gardens; but how frequently we see trees with ugly gaps in them and the labour of years set at naught by the dying-out of some of the branches, which often are those that can be least spared. Trees are subject to this disfigurement, and not unfrequently ruin, in various soils. In some gardens, however, Apricot trees grow healthily whether the soil is light or strong, so that the origin of the evil referred to is not exclusively hidden below the ground. We must therefore seek for the cause in another direction.

Many theories have been advanced from time to time explaining the causes conducing to the unfortunate state of things which makes the cultivation of this fruit so perplexing; and it is certainly unsatisfactory to be obliged to look upon "branch dying" in Apricots as incurable. Besides unsuitable soil an excessive use of the pruning knife, exposure of bare branches to sun and frost, the check occasioned by old scraggy or dead spurs and climate, have all had a share of the blame. Most likely all these are causes that more or less affect the circulation of sap, and thus local obstructions are formed which in time, through the accumulation of diseased tissues, cause the branches to die.

But I fear we have yet another agent working as ill effects as any of the causes mentioned, if not in reality the first cause in many cases. I allude to a small borer which I find is causing much injury to our Apricot trees here, although in a way that is not likely to attract observation, the ejected *débris* of bark and alburnum being of a light brown colour, inconspicuous and small in quantity compared with the internal ravages.

Six years ago I planted against a wall a number of Apricot trees, which have done well; in fact have quite covered the spaces allotted to them, the riders having had to be removed a year ago to afford additional space. All went well till this season, when several branches died off; most trees lost one, some more. I naturally felt disappointed in thus having the symmetry spoiled of trees of which I was a little proud because of their rapid extension combined with fruitfulness.

The various theories advanced were intently thought over, and each in turn dismissed as seemingly inapplicable. The several causes of check which are said to form local centres of gum seemed entirely absent, there being ample foliage covering every branch, the stock only being exposed to the action of the sun, even the junction of stock and scion being fairly shaded. There were no old spurs; the knife had never been used except to cut any weakly shoot back to a few eyes to cause a strong start, and to cut back the strong centre shoot the first year or two sufficiently to insure a well-furnished middle to each tree. All other growths required had been laid in at full length (frequently 4 feet in one season) and the balance maintained where necessary

by summer pinching, and this may be said to be all the pruning they ever had. Finally, there was no gum on the trees from which the branches died. Thus there appeared to be thorough healthiness in every part, yet there were the blanks which came without giving a sign until the young starting growths hung flagging and withered on the branches in the spring.

Last month I observed here and there, perhaps in two places on a tree, a little brownish sawdust-like substance on branches near their junction with the main stem; it appeared less than might easily be laid on the head of a tincture, but on looking in the clefts between the branches more was observable, and on cutting out a piece of bark a grub was discovered which was about a third of an inch in length. From one piece of branch I extracted over a dozen of these larvæ, and in other places three or four specimens were found. Their tunnels are very small, but complicated and winding; it is therefore difficult to get them out whole without doing unnecessary damage to the tree, as the insects are very soft with the exception of their head. However, I succeeded in getting out five whole and alive, three of which were sent to the office of the *Journal of Horticulture* for identification; the other two, unfortunately, made their escape. In two instances the branches affected were almost encircled by their operations, although there was little to be observed outwardly, which renders it the more necessary to direct attention to the subject.

There is now a considerable amount of gum exuding at the places from which the larvæ were extracted, but I trust to be able to save the branches; whereas if the grubs had had a little more time unobserved the result might have been a ringed limb, which would have started into growth next season only to wither and die, while remaining apparently sound all the winter. Supposing their workings not to have proceeded to such an extent as to cause the direct loss of the limb, it is certainly probable that the surrounding cambium would become surcharged with gum, the formation of woody fibre would cease, all alimentary supplies reaching that point would only increase the evil, and if the affected part were not cut out entirely (when healthy bark might in time cover the wound) there would be little chance of circulation ever being re-established on the injured side of the branch. I do not infer that those borers are the cause of dying Apricot limbs generally, as, until there is further evidence forthcoming as to their existence and depredations from other cultivators of the Apricot, it would be premature to do so; but I think that it may be the cause in some cases, and especially would it be well to keep a sharp look-out when other causes seem absent.—R. CROSSLING, *St. Fagan's*.

[The larvæ sent prove to be those of *Sesia myopæformis*, also called the "Apple Clearwing," a small fly-like moth. Though named from the Apple, it is as frequently found infesting the Pear, where several dozen of the larvæ have been sometimes removed from a single branch. That the moths should deposit eggs upon the Apricot is an unusual, yet quite possible, circumstance. There is no certain mode of preventing its attacks beyond the destruction of infected branches or shoots, and the rather tedious process of catching

any moths seen on the wing during their period of flight, which lasts about a fortnight from midsummer.—EDS.]

### POTATO CULTURE.

YOUR correspondent, "A SURREY PHYSICIAN," wishes for information from others with regard to the advantage for otherwise of earthing-up Potatoes. I willingly give him the benefit of my experience. I have on several occasions tried the non-earthing plan, and the result has always been a failure. One ought not to lay down a hard-and-fast line for all occasions with regard to the cultivation of the soil, and he may have been right in the course he pursued in the present year, but I should not recommend it for the future. The more they are earthing-up the less liable they are to disease. In the case of those that were injured the operation was delayed too long. From the great similarity of the early part of the season now past to that of 1860 I thought we might escape with but little disease, but unfortunately this has been a worse year than 1860. The latter half of July with its damp and warm atmosphere was fatal, whereas in 1860 this period was fine. The rain, too, since that time has been excessive. The Magnum Bonum, it appears, has resisted the attacks of the disease well, and if of good quality must be a valuable variety. Perhaps "A SURREY PHYSICIAN" can enlighten us on this point. It is not fair in all cases to judge this year, but he has grown it during other years.—AMATEUR, Cirencester.

### THE ROSE ELECTION.

#### THE NEWER EXHIBITION VARIETIES.

It is a satisfaction to arrive at the termination of a task, even though that task may be in a great degree a pleasure, as for the witty Hood remarks, even

"One of the pleasures of having a rout  
Is the pleasure of having it over."

So it is satisfactory to be able to say, "That is done at any rate;" still, "If 't were done, 't were well it were well done; and if it were well done, 't were well it were done quickly." In both of these points I confess to failure; as to the latter, a variety of circumstances seem to have conspired together to delay the appearance of the poll. I can only say I have struggled to send it out earlier. As to the former portion, I must allow that of all the Rose elections it has been my fortune to conduct this has been to myself the least satisfactory; indeed the election has, like some of the candidates, been somewhat thorny.

Roses, fortunately for themselves perhaps, do not carry their age in their mouth, as up to a "certain age" do our equine friends; and where a question of age has arisen, and very many have occurred, the *preux chevalier* has been nothing loth to place his lance in rest, not always with the button on the point, and vouch for the age, always a delicate point, of the specimen of our flower queen he may have selected—aye, as ready as were the old mailed champions of former ages to do battle for the fair ones of their choice. I have had to question not a few of the returns, indeed very few have not taken several postal trips, and I cannot but fear that by such doubts I have unintentionally given some offence. As we were restricting the inquiry to a "certain age" it certainly appeared to me my legitimate task that I should question a vote of doubtful character. I have done so, I trust, without considering that I possessed greater knowledge, and fully conscious of the difficulties which beset the elector. If I have in the hurry of an unusually occupied period appeared to do so in a wrong spirit, I exceedingly regret it; I may have been misunderstood, and therefore if I have unwittingly or unwittingly given offence to any elector I now plead to be forgiven, and hereby offer as ample an apology as I can. On the other hand, I gratefully acknowledge the assistance given me by others; and I would specially mention Mr. Baker of Reigate, to whom, personally unknown, I feel much indebted for notes on newer varieties.

Would that some enterprising rosarians amongst our nurserymen would bestow a little extra labour on their catalogues, and give us the age and the raiser's name of some of our Roses. It seems to me this would be far more interesting to Rose-growers than flaming descriptions as to form and wood, which are often unverified by the results. The Rose elections of past years have, I presume, settled the ages of some few, and as the list has not been found fault with we may presume it is correct. But how many are without age, a local habitation, and a name, at least of the raisers! Even amongst the new Roses the raiser's

name is frequently omitted, or given only where the Rose has been raised or sent out by the firm, and in not a few cases the Roses are found only in the catalogue of the raiser, having long since been tried by others and found wanting. In this respect some of the foreign catalogues are a great improvement on those of our own nurserymen, and what information I have been able to get as to dates and raisers' names has come chiefly from them; possibly it may be faulty, but such as it is I give it for what it is worth. It will be noted that there are some blanks to fill up.

Should in future years an election of newer exhibition varieties be attempted, I would strongly urge that the recently admitted Roses should be omitted. I believe the present election would have been more valuable and ultimately more reliable if the years had been from 1872 to 1877 inclusive. It is doubtful work judging recent introductions, and in my experience I have noticed not a few predictions utterly falsified, and it seems to me that at least two years' trial is necessary to form an opinion.

And now as to the poll. Most of the headings of the columns speak for themselves; the A, B, and C representing the first, second, and third class votes given by amateurs; the same letters with the asterisks denote the votes of nurserymen.

No.	Name of Rose.	Character.	Age.	Raiser.	A	B	C	A*	B*	C*	Total
1	Capitaine Christy	H.P.	1873	Lacharme	11	10	12	8	13	12	34
2	Duchesse de Vallombrosa	H.P.	1875	Schwartz	7	3	11	8	3	12	23
3	Star of Waltham	H.P.	1875	W. Paul & Son	8	2	2	7	4	11	23
4	Mons. E. Y. Teas	H.P.	1875	E. Verdier	10	3	12	9	10	10	32
5	A. K. Williams	H.P.	1877	Schwartz	9	1	0	10	1	10	20
6	Abel Carrière	H.P.	1875	E. Verdier	3	4	3	6	4	0	20
7	Hippolyte Jamin	H.P.	1874	Lacharme	4	5	12	4	3	1	20
8	Sir Garnet Wolseley	H.P.	1875	Cranston	2	7	1	6	1	10	20
9	Duke of Connaught	H.P.	1876	G. Paul & Son	1	7	1	9	1	11	20
10	Comtesse de Serenys	H.P.	1875	Lacharme	6	8	1	10	3	0	19
11	Sultan of Zanzibar	H.P.	1874	G. Paul & Son	6	2	3	11	6	2	19
12	Reynolds Hole	H.P.	1873	G. Paul & Son	5	4	1	10	3	0	19
13	Mrs. Baker	H.P.	1874	Turner	3	4	3	10	4	3	19
14	Mdlle. Marie Finger	H.P.	1873	Lacharme? Rambaux?	6	1	3	10	2	3	18
15	Royal Standard	H.P.	1874	Turner	2	3	2	7	3	5	17
16	Jean Lisbaud	H.P.	1875	Lisbaud	2	5	0	7	6	1	17
17	Marguerite Benasco	H.P.	1875	Brenco	7	0	0	7	3	3	15
18	Mdlle. M. Cointet	H.P.	1873	Guillot, fils	3	3	3	9	2	2	15
19	Cheshunt Hybrid	H.P.	1872	G. Paul & Son	4	4	1	9	2	1	14
20	Marie L. Pernet	H.P.	1876	Pernet	1	5	0	6	4	1	12
21	Madame Lambert	T.	1878	Lacharme	0	3	4	7	4	1	12
22	Madame Lacharme	H.P.	1872	Lacharme	1	4	3	8	2	0	12
23	Gabriel Tournier	H.P.	1876	Levet	1	0	6	6	2	7	13
24	Miss Hassard	H.P.	1875	Turner	0	5	1	6	1	5	13
25	Jean Ducher	T.	1874	Mad. Ducher	3	3	2	8	0	4	12
26	Magna Charta	H.P.	1875	W. Paul & Son	2	3	1	6	1	2	12
27	Mad. Prosper Langier	H.P.	1875	E. Verdier	1	3	4	7	2	1	11
28	Constantin Fretlakoff	H.P.	1875	E. Verdier	3	1	3	7	2	1	11
29	John Stuart Mill	H.P.	1874	Turner	1	2	2	5	3	1	11
30	Boleichen	H.P.	1877	Turner	1	1	4	6	1	3	11
31	Mrs. Laxton	H.P.	1875	Margottin	3	1	1	5	3	0	10
32	Avocat Duvivier	H.P.	1875	Laxton	3	1	1	5	3	0	10
33	Jean Souperb	H.P.	1875	Leveque et fils	1	2	2	5	0	3	10
34	La Rosière	H.P.	1874	Lacharme	0	3	2	5	1	3	10
35	Rev. J. B. M. Camm	H.P.	1873	Damazin	0	2	4	1	2	5	9
36	Emily Laxton	H.P.	1876	Turner	1	0	3	4	0	3	8
37	Sophie Fropot	H.P.	1876	Laxton	1	0	1	2	1	3	8
38	Fenelope Mayo	H.P.	1878	Levet	2	1	2	5	0	1	8
39	Mar. of Exeter	H.P.	1876	Davis	1	1	2	4	0	3	8
40	Perle des Jardins	T.	1878	Laxton	1	0	2	3	0	2	8
41	Mabel Morrison	H.P.	1878	Levet	1	0	2	3	0	2	8
42	Oxonian	H.P.	1875	Broughton	1	0	2	3	1	1	7
43	M. Ferdinand Jamin	H.P.	1876	Turner	1	1	1	3	1	2	7
44	Madame Nachury	H.P.	1872	Ledecheux	0	1	1	2	1	3	7
45	Anna Olivier	T.	1873	Damazin	0	3	1	4	0	1	7
46	Mad. Gabriel Lutz	H.P.	1878	Ducher	2	1	2	5	0	1	7
47	Duc de Montpensier	H.P.	1876	Ducher	1	0	1	2	1	1	6
48	Madame Welch	T.	1878	Leveque	0	1	1	2	1	1	6
49	Duchess of Bedford	H.P.	1878	W. Paul & Son	3	0	0	3	0	0	6
50	Prince Arthur	H.P.	1875	Cast	0	2	1	3	0	0	5
51	Princess Beatrice	H.P.	1872	W. Paul & Son	1	1	0	2	1	2	5
52	Mdlle. Emma All.	H.P.	1876	W. Paul & Son	0	0	2	1	1	3	5
53	Souv. de Mad. Pernet	T.	1877	Lisbaud	0	0	2	1	0	3	5
54	Comtesse d'Alza du Parc	T.	1876	Schwartz	0	0	2	1	0	3	5
55	Empress of India	H.P.	1876	G. Paul & Son	0	0	2	1	0	3	5

Four votes were obtained by eleven candidates, whilst thirteen obtained three votes; nineteen were only mentioned twice, and no less than fifty out of the 148 Roses named obtained but a solitary vote. It seems marvellous that with only twenty-four voters as many Roses should receive but solitary notice, yet so it is.

Contrasting this list with the last election list there is one point that stands out in very bold relief and is exceedingly gratifying, that is the increasing number of varieties which our English raisers, in spite of the difficulties of climate, have



managed to bring into the fifty-five tabulated Roses. Giving the foreign growers the benefit of those Roses unattached—although I believe one, Madame Welsh, is English—they have yet succeeded in placing amongst the best fifty-five no fewer than twenty-two Roses; whilst in the tabulated seventy-two Roses of last year's election only thirteen English Roses were named, and most of these were very low down in the list.

Two or three of the returns have not been included, being incomplete or otherwise informal, as, for instance, when only twelve or twenty-four varieties have been named instead of the thirty-six asked for. It is manifest that the twenty-four named thus receive a great advantage in position which certainly a dozen more ought to share.

One Rose stands well in the front considering its youth, and that is A. K. Williams. As an exhibition variety it will probably rank very highly, distancing some of those now placed higher. It will be noted by those who examine the list that in first-class votes alone A. K. Williams would come third. I may also state that Marguerite Brassac would undoubtedly have held a much higher position had not several electors considered her a copy of Charles Lefebvre.

The electors, curiously enough, consist of twelve amateurs and the same number of nurserymen, and a comparison of the different sides will interest some of our readers.

I must not close this portion of my task without gratefully acknowledging the many kind letters of approval that I have received, and I desire also to thank heartily all those who have assisted by their lists to make this election successful. I trust it may interest some and prove useful to many.

I propose in our next to give the poll of the garden varieties.  
—JOSEPH HYNTON, *Warminster*.

### VINES IN POTS.

I HAVE read with very great pleasure Mr. Iggulden's able contribution on page 263, and I hope with great profit. It is the most practical paper on the subject I ever read. I feel indeed proud we have such a man in our ranks. Respecting cut-backs I quite agree with him, and hold it next to impossible to grow good ripened fruiting canes from eyes the same year. I am well aware of the great service done to us by the leading nurserymen, to whom we owe a debt of gratitude, still they cannot do impossibilities. I have just now sixty canes quite ripe and ready to begin forcing at once. They are all well top-dressed and pruned—two points of importance for early forcing. Mr. Iggulden gives sound advice when he says six bunches are ample to leave on each Vine. This is my practice except with Trebbiano, which comes magnificently in pots. I have had them 4 lbs. in weight, clear amber in colour, large berries, and really good in flavour.

With respect to turning the Vines out in a prepared border I feel sure Mr. Iggulden will forgive me for disagreeing with him. I turned out a dozen four years ago, and very much they pleased me until the Grapes arrived at the colouring point, when they did not finish satisfactorily. A gardener in this locality seeing my dozen turned out was so pleased with their good appearance that he turned out his whole stock the next year, and they behaved in a similar manner. I may say in conclusion, my two pot vineries are quite my two pets, and no houses here are more productive than they are. We generally commence cutting about the middle of April.—R. GILBERT, *Burghey Gardens*.

### WINTER-FLOWERING PLANTS.

THE season is fast passing away with but few advantages for the general plant-grower. The year started with disadvantages, and instead of decreasing as the season advanced, as we generally expect them to, they have comparatively speaking increased. The summer is now gone, and autumn returned with no brighter prospect; sunless weather and cold nights still continue. Growers that are short of warm pits have this year felt more than ever the need of them where abundance of flowers has to be produced through the winter months. Cold pits for some classes of plants have been almost useless. Poinsettias and Euphorbias of the later batches have never been in cold frames with us this season. The earlier batches through necessity had to be placed in them; their progress was unsatisfactory, and far behind what we should have anticipated in an ordinary season. Their growth is soft, nor are they so well fitted for producing large bracts as if the wood was in a more matured state. It is really necessary, especially in seasons

like the past, to have heated houses or pits at command, where heat can be applied when deemed expedient before the roots receive a severe check, which is perceptible in the foliage, which soon turns yellow and finally falls off. It will be well for us here to say that when the above-mentioned plants are housed, caution must be exercised that the temperature is not kept too high. Plenty of air must circulate through the house, and should be kept in a much drier condition than is generally supposed to be good for the well-being of the plants. The external temperature has been unfit for bringing plants into a matured state for flowering, and unless artificial heat is employed the grower will fail with all other attempts to have a satisfactory return for the time and labour expended.

Euphorbia jacquiniæflora is frequently grown in too much heat. It will in ordinary seasons do well in cool frames for at least six weeks or two months, and when removed to warmer quarters should be brought on gradually. Grown close to the glass in a rather cool atmosphere it is an admirable plant for conservatory decoration. Its lovely brilliant orange-scarlet sprays with cool treatment are then much brighter. It is light and elegant, and stands out well when arranged amongst plants of a stiff and dwarf nature.

Libonias have been free from insects this year, and have made good bushy plants under cool treatment. This plant will not grow rapidly if subjected to too much artificial heat. Heat is advantageous in the early part of the plant's development, and a little warmth again in early autumn when the plants are removed from cold frames. The plant enjoys from this time a place near the glass where air circulates freely. The same remarks apply with equal force to the old but useful *Sarcocoraphis Ghiesbreghtiana*.

Young plants of *Abutilons* do not appear to be much affected by the season, for they already are showing abundance of bloom. We have concluded that these useful plants will succeed satisfactorily under very different conditions. *Oelasma* and *Cockscombs* for early winter are now generally known; they not only last a considerable time for the decoration of the conservatory but are valuable for cutting purposes. The plants are in a very backward state, especially those sown late. They must have a good brisk temperature to bring them forward as quickly as possible.

Begonias of the *manicata* and *hydrocotylifolia* types have this year been very unsatisfactory in cool pits; the damp dull weather has caused their leaves to decay. It has been an impossibility to keep the foliage dry, consequently where cold frames only have been at command the plants have lost many of their lower leaves. *B. parviflora*, *B. weltoniensis*, and *B. Ingramii* are not so susceptible to damp as *B. manicata*. Of the three mentioned the continuous-blooming *B. Ingramii* is by far the best. For spring work few if any surpass *B. nitida alba* when true, and its beautiful rosy-pink form named *roses*.

*Scutellaria Meociniana* also does fairly well in cool quarters during the summer when seasons are favourable, but we have not removed our plants this year out of heated pits. *Linum trigynum* has developed favourably; it appears to enjoy shade and a moist atmosphere while growing. This old favourite is very subject to red spider, which soon arrests its vigorous growth if timely measures are not adopted to destroy it.

*Heliotropes* and those useful plants *Zonal Pelargoniums* must be under cover in a light airy situation, where those intended for flowering next month can be assisted with a little heat. Plants that were cut back during the summer and placed outside have not made much progress. If success is desired with these plants they must be encouraged for a time indoors.

Tea Roses intended for early forcing must have special attention in assisting to render the wood thoroughly matured, as it is in a backward state. The plants must be kept cool and the air about them dry. The earliest plants of Hybrid Perpetuals should now be under cover in a dry, airy, cool atmosphere for a time before pruning them back. We believe the new hybrids of Mr. Bennett will prove very valuable to lovers of Roses generally; we have formed a very high opinion of them. They are most floriferous, every small shoot producing a bloom, and they appear to continue flowering for a considerable time.

*Imantophyllum miniatum*—If this plant was assisted with heat after flowering and then grown in a cool house it will now have its growth matured, and can be again pushed forward into flower with the assistance of heat. Home-grown *Belladonna* and *Guernsey Lilies* do not throw up their flower spikes so early as those from the Continent, but can be brought

forward as required from this date. They do well grown in pots or planted out. Heaths, such as *Erica Wilmoreana* and *E. hyemalis*, are in a very backward state in the north. The freer varieties, such as *E. gracilis* and *E. melanthera*, have not set so well as usual. *Epacris* are in good condition, and will bloom well.

*Azaleas* are well set with prominent buds, while *Camellias* in many instances have but few flower buds. The season has been too moist and dull, especially at the time when the first growth was completed. The plants again started into growth at the expense of the flower. This second growth in established plants we endeavour to avoid by keeping the house drier and cooler after growth was completed, but all our efforts this year have failed to prevent a second growth in many plants.

*Calla aethiopica* has thoroughly enjoyed this wet and cloudy season. Our plants are strong and even more vigorous than they were last year—a sufficient proof that it is unwise to subject them to that unnatural ordeal of drying. If not lifted and repotted where the planting-out system is practised no time should be lost. Our plants are partially established in their pots, and some have already commenced producing strong spathe of flower. For room decoration this plant is indispensable.

*Salvia Heeri* and the bright rosy pink variety *Salvia Bethellii* should at once, where planted out, be transferred to pots and kept in a shady position until root-action has again commenced. *Solanums* have this year failed to set a berry outside with us and with many others in the north. Those only who grow the plants under glass and obtained a crop of berries before placing them outside have been successful.

The early batches of *Mignonette* will by this time have covered the trellises allotted to them, and will, if the plants were pinched a short time ago, have commenced to show a good and regular head of bloom, which will come in well when the plants outside are cut off by frost. These, as well as the early batch in 6-inch pots, should be placed in a light airy situation near the glass.

The hardier class of *Rhododendrons*, *Ghent Azaleas*, *Dentzias*, *Plums*, &c.—growers will this season see the advantages of growing under glass in early spring. *Rhododendron præcox* and *R. multiflorum* grown under glass in early vineries and Peach houses could now be brought into bloom with little trouble.—W. BARDNEY.

#### ROOT-PRUNING.

So much has been written on this subject at different times that anything further seems only to exhaust a threadbare subject; nevertheless, as I am a strong advocate for root-pruning, and believe it to be the only means of inducing fertility in barren fruit trees, the few remarks which I now propose to advance shall be entirely based on my own experience. It has more than once appeared to me that the practice of root-pruning must sooner or later occupy a far higher and important position in the routine of the garden. Nearly all fruit trees come into a bearing state at some period of their existence, but in order to insure a fine crop of well-finished good-flavoured fruit year after year considerable attention and skill are required. The old system of cutting the young shoots back to one or two eyes in the winter, with the idea that it induces the production of flower buds, is, I think, very wrong. So long as the roots of fruit trees are allowed to roam, and subjected to no periodical restraints, so long will the trees remain more or less unfruitful, particularly so if they are encouraged by the annual spurring-back of the young wood. The last planting of fruit trees here was in 1871, principally Apples and Plums. Three years after being planted they came under my charge; they were then making strong growth, and apparently in good condition, but little fruit was produced. This being in the month of September I thought I would wait a week or two longer; therefore the following month I examined their roots, which I found as straight and clean as possible, the trees being planted in deep pits concreted with yellow clay. We lifted them carefully with large balls, mixing the concrete with the soil, and replanted them near the surface, spreading about 2 inches depth of half-decayed stable manure over the surface of the ground. A fine crop of fruit was produced the following year, thus proving that root-pruning, if judiciously performed, need not be the means of sacrificing a crop, but the means of promoting one of greater weight and superior quality.

To be as brief as possible, and confine my remarks to what we practise here, I may add that the trees are all surface-

planted except an old orchard. Their roots are looked to every second year as soon as the fruit is gathered, and heavily mulched with manure, which remains on until the following autumn, when the rough portion is raked off and fresh material applied. The trees are pyramidal, averaging from 8 to 12 feet high, and produced good crops every year. This year they are all heavily laden, but, like all the productions of sunless 1879, the fruits are comparatively small. The following are a few of our varieties, all of which have borne heavy crops this year:—*Apples*: Lady Derby (Whorle Pippin), Winter Hawthornden, Norfolk Stone Pippin, Nelson Codlin, King of Apples (Warner's King), Lord Derby, Grenadier, Beauty of Kent, Packington's Summerington, Louis L. Normanton Wonder (Dumelow's Seedling), Oslin, Mère de Menage, King of the Pippins, Lady's Finger, Ringer, Rylance's Surprise (very large), Cellini, Sturmer Pippin, Pott's Seedling, Golden Spire, Lord Suffield, Keswick Codlin, Emperor Alexander, Golden Reinette, Blenheim Pippin, Golden Pippin, Small's Admirable, Devonshire Quarrenden, and Gloria Mundi. *Plums*: Victoria, Red Orleans, Jefferson's and Coe's Golden Drop.—H. ELLIOTT.

#### ROSES.

"WYLD SAVAGE" at page 224 recalls to mind with pride those years in which he won first prizes at the metropolitan shows; and as I have had the pleasure of standing shoulder to shoulder with him, or rather our stands have been placed side by side at some of those shows, I felt regret at his non-appearance as an exhibitor during the past season. However, according to his present determination we hope to hear of his competing again, and I trust successfully too.

How envious must "WYLD SAVAGE" feel in reading "Current Topics," page 275, to find that Mr. C. P. Peach never sees green fly, an unhealthy shoot, or a mildew one in his garden, and all prevented by winter mulching, proper pruning, and the avoidance of Dog Roses as stocks, especially the seedling Briar. Surely this will make "WYLD SAVAGE" and others hesitate before using the seedling Briar as a stock, when by the avoidance thereof they may escape so many ills the Rose is liable to. I for one should certainly feel grateful if Mr. C. P. Peach would supplement "Current Notes" with an article on his method of pruning Roses, as those grown on the Manetti are with me quite as virulently attacked with mildew as those on the seedling Briar; and as they all received a winter mulching my error must have been in the pruning, which was quite orthodox.—OXONIAN.

#### THE ROYAL GARDENS, KEW.

THE official Report on the progress and condition of the Royal Gardens, Kew, during the year 1878 has at last been issued, but the interesting nature of its contents and the exhaustive manner in which they are treated amply compensate for its somewhat tardy appearance. Many of the subjects are of considerable importance to colonists, and the information conveyed in reference to them will be found of great value. The Coffee-leaf disease which has proved so disastrous in Ceylon is treated on, the fungus *Hemileia vastatrix* being described and illustrated by copies of the elaborate drawings which accompanied the Rev. R. Abbey's paper in the seventeenth volume of the Linnean Society's Journal; the most important remedies are also referred to. Some instructive correspondence and remarks upon various materials that may be utilised in the manufacture of paper are included in the Report, and the plants specially noted for the purpose are the Bamboo, the Baobab, *Yucca brevifolia*, *Eriophorum comosum*, *Molinia cærulea*, and the Trinidad Spear Grass. Indiarubber plants also receive a large share of attention. Mr. Mann's mode of cultivating *Ficus elastica* in Assam is detailed, the chief caoutchouc-yielding plants such as species of *Alstonia*, *Hevea*, and *Castilloa* are mentioned, and the successful cultivation of the two latter in Ceylon and India is described. Certain plants adapted for cultivation in tropical countries as fodder are indicated, especial attention being given to the Prickly Comfrey and the Grass *Euchlaena luxurians*. A full account of *Cinchona* cultivation in Ceylon and Jamaica is given, also particulars of the establishment of Liberian Coffee in Demerara, Ceylon, and Singapore, with a variety of subjects of minor importance.

Respecting the work of the establishment in distributing and interchanging plants and seeds, the following significant statistics are submitted:—Received from 239 contributors,

4803 plants and 2337 packets of seeds; distributed 1365 packets of seeds, 7616 stove and greenhouse plants, 1202 herbaceous plants, and 1584 trees and shrubs.

The number of visitors to the Gardens during 1878 was 725,422, being nearly 26,000 in excess of all previous years. The greatest week-day attendance was on August the 5th, when 57,121 persons visited the Gardens. The gates were opened at 10 A.M. on each of the bank holidays, but comparatively few persons appear to have availed themselves of the privilege, as on April the 22nd only 3352 were admitted before 1 P.M., out of a total for the day of 46,201. In reference to this Sir Joseph Hooker writes as follows:—"Considering the persistence and energy with which the movement for a daily early opening was pressed, I confess I am surprised at the small success which has attended the experiment. I am confirmed in my belief that the demand does not really correspond to any widely felt public want, and that the ordinary hour of opening is entirely adequate to the convenience and needs of metropolitan visitors; while I am more than ever convinced that the early opening would be highly prejudicial to the unique character of the Royal gardens as a place of public resort." The truth of these remarks will be readily admitted by all unprejudiced persons, and it would be a subject for regret that an establishment which renders such valuable services should be impeded in its working merely to satisfy a minority of interested local agitators.

#### NATIONAL ROSE SOCIETY.

A MEETING of the General Committee was held by permission of the Horticultural Club at their rooms, Arundel Street, on Tuesday, October 14th; R. G. N. Baker, Esq., in the chair. The Hon. Treasurer submitted his financial statement, from which it appeared that after paying all expenses there remained a balance in the bank of nearly £130. It was then resolved that the outstanding liabilities to prizewinners for the year 1877, which they had kindly allowed to remain over, should be paid; there would then remain a balance of £60 and the Society is entirely free of debt. It was proposed also that the London Exhibition should be held at the Crystal Palace, Sydenham, on July 8th. An offer had been made by the Manchester Botanical Society that the provincial Exhibition should be held there again; but it was determined that it should be announced that, in order to give opportunities to other localities, the Committee would be willing to receive applications from any other towns which might be willing to receive the Society. It was announced that Mr. R. G. N. Baker would give a cup, value £10 10s., to be competed for by amateurs; Messrs. Paul & Sons a cup, value £10 10s., for Cheshunt-raised Roses; and the proprietors of the "Journal des Roses" a silver medal for twenty-four Roses, three of each, one full blown, another half blown, and the third a bud.

The meeting was most cordial, and general satisfaction expressed at the prosperous condition of the Society.

#### AURICULA CULTURE.

A CORRESPONDENT in the midland counties who is just commencing the growth of the Auricula asks for some information. My observations will be simply intended for beginners, and I shall from time to time as the seasons advance give what directions I think necessary for their successful cultivation.

My friend described to me the frame he had obtained to winter them in. It is one of those standing on legs, glass at the sides, and open at the bottom. He had had the frame made from a drawing he had seen in some book. These frames were at one time much used in the north. Now, although the Auricula does not dread frost so much as damp, yet I prefer a frame where they can be more snugly housed during the winter months, and for a beginner nothing can be better than an ordinary garden frame standing on a good deep bed of coal ashes in order to prevent the worms from getting into the pots; or a frame may be made about double the depth of the ordinary one, and shelves made of battens through which the water can run away. I have had them made with hinges, but I think it is better not to do so, and when air is to be admitted they can be tilted on the lee side, so that the water does not beat in; by this means, too, there is less fear of drip, which is one of the most fatal enemies of the Auricula. When the weather is cold and frosty a good piece of frigi domo should be laid on the frame, as, although the Auricula plant is naturally alpine and will survive even if the soil be frozen hard, yet when the truss is formed in the heart of the plant frost is apt to injure the evenness of the bloom, and should therefore be avoided. I have seen them well grown in both ways, but for a beginner I

think the ordinary frame is the best. As anyone beginning to grow them at this time of the year must procure plants from growers it will be needless now to give any directions as to the pots, their size, shape, &c. This will be better done in the spring, when the season for repotting arrives. The points to be observed now are to keep the pots free from weeds, to water only sparingly—I do not mean giving dribbles at a time, but to give a good watering, carefully avoiding wetting the foliage, and then not to water again until the soil becomes dry; and, indeed, during the winter months they only require such applications of water as will keep the foliage from flagging. Anything short of this will suit them best. Should the surface of the soil become green it is best to stir it up with a blunt stick. Let slugs also be carefully looked for; they oftentimes get at the neck of a plant and eat away into the heart before anything is known of their presence. The presence of drip ought carefully to be guarded against; green fly, too, although not so troublesome in the winter months, is also injurious, and should be brushed off with a camel-hair brush. Air should be given at all times when it is possible to do so, but taking care to open the frame at the lee side so as to prevent rain from beating in and the cold wind from blowing on the foliage. By following these directions a small collection may safely be housed during the next three months, when first operations will have to be undertaken.—D., Deal.

#### GRAPES WITHOUT FIRE HEAT.

YOUR much-respected correspondent, Mr. Harrison Weir, says on page 285 that I am not correct in stating our Grapes were grown without fire heat. I think it is only right that I should say that I have never written about, shown, or represented any Grapes as being "grown" without fire heat, all I have said being they were "ripened" without fire heat. I do not suppose that any of your readers who might raise Cauliflower or Celery plants in heat, say in March, would think it correct to term them forced vegetables if shown in August after growing in the open air from April or May.

I think Grapes which have no fire heat from the time the berries were visible until they were perfectly coloured may fairly lay claim to have been ripened without fire heat. I may say that under the same circumstances as the Black Hamburgs, Gros Colman and Barbarossa have acquired a perfect colour. I do not mean to say that it would be well to have all vineries without any means of heating them, but I daresay there are many growers who would gladly do with less fire heat than they employ at times.

Respecting excesses of heat, I may say that I think there are great mistakes in the advice so frequently given about Orange trees. This bad season the Orange trees here have stood in the open air since the middle of May; many of them have ripened fruit, and at the present time (October 14th), pecks of fresh fragrant blossom could be gathered, although the night temperature often falls to 35°.—J. MUIR.

THE discussion on ripening and colouring Grapes in unheated houses—initiated by Mr. Muir, and the feasibility of which during such a sunless season as has passed has been discussed by other correspondents—is of great practical utility. Can good, fairly sized, and well-flavoured Grapes be obtained without fire heat under such circumstances? I am in a position to say Yes, decidedly, even in Ireland, which cannot boast of such a genial climate as in the southern counties of England. Yesterday I was invited to taste Black Hamburgs grown in a lean-to house with a south-west aspect, in which there has never been even a heating apparatus, by Mr. Ryan, of the firm of Boyd & Ryan of this town, and better-flavoured Hamburgs I have rarely tasted. I was assured they have been cutting for some time, and a considerable crop still remained. Is this result possible generally? and if not, why not? Remembering that the application of fire heat is the rule to complete the ripening and colouring this year, and not the exception, the answer to those questions is very important when one considers the additional labour and expense.

Before giving what I consider the secret of Mr. Ryan's exceptional success I may appropriately refer to the large vineries of one of the merchant princes of Waterford (Henry White, Esq.), recently visited by a gardening friend and myself, from this point of view. Two of the largest are perhaps 50 yards long, and have been erected from designs by the Messrs. White, and entirely with the view of growing Grapes for sale and profit. The houses are lean-to's, and erected

with the special object of catching every ray of sunlight. As early Grapes are required, and the warm sunlight did not come, recourse was had to fire heat, and in the vineries referred to the middle of last month, about £11 had been expended in coal, with collateral additional expense for attendance. The attendance and cost of water was reduced to a minimum, owing to all the rain water of the structures, and it was considerable this year, being collected in a large cistern and pumped as required by a windmill adjacent, erected from plans of those intelligent gentlemen. As I have not seen anything of the kind in Ireland for a like purpose I digress to note its perfect success, cheapness, and feasibility. Of course, growing Grapes for such a purpose, the expense referred to for coal, &c., will lessen the profits; but it seemed unavoidable, especially as some of the Vines—such as Lady Downe's, Gros Colman, and West's St. Peter's—would be slow to ripen or colour under the most favourable circumstances without fire heat. Some of the bunches of Gros Colman were little inferior to those shown at the Exhibition at Paris last year, and highly flavoured. The system of growing is from single eyes, but I must not further digress from the subject.

Three things seemed to favour the ripening of Mr. Ryan's Grapes:—1, The soil and subsoil; 2, The absence of plants in the vinery; and 3, A plain-washed back wall. I have just space to say a word on each. 1, Clonmel is built on a sandy shingly formation that enables the soil and subsoil to part readily with superfluous moisture, and this applies here. The soil for the roots to grow in is consequently always dry, and the relative temperature on that account higher, especially, as in this instance, when properly prepared. 2, I know several crops of Grapes utterly ruined where employers insist on having large foliage and other plants in vineries. Success would seem impossible without fire heat in such cases, and extreme care in ventilation besides. 3, The reflected rays of heat from a whitewashed back wall would seem to deserve more consideration. If Mr. Ryan can ripen Grapes on a small scale, and without any exceptional treatment or advantage, why cannot others on a larger scale?—W. J. M., *Clonmel*.

#### EARLY CHRYSANTHEMUMS AT SLOUGH.

SOME extremely bright beds of dwarf Chrysanthemums have, for more than a month past, been the most attractive feature in Mr. Turner's nurseries. The varieties are planted in rows—white, pink, yellow, maroon, rosy purple, &c., and have produced an extremely gay appearance, and the flowers have been most valuable for cutting. These cheerful beds suggest the usefulness of early-flowering Chrysanthemums for gardens generally, and not less so for public parks, both metropolitan and provincial, where flowers are cultivated. Especially during the past two or three years Pelargoniums have been of disappointingly short duration, and for nearly two months in late summer and early autumn many parks and gardens have been comparatively flowerless. In Battersea Park one row of a white Chrysanthemum has for a month past produced more flowers than all the rest of the beds and borders put together; but brighter and richer colours are much wanted, and there is no difficulty whatever in producing them.

Early-flowering Chrysanthemums are also equally useful for conservatory and greenhouse decoration during September and October, and when well grown they impart a fresh and bright appearance to the structures just at a time when many plants—Pelargoniums, Fuchsias, Achimenes, &c., have a seedy or worn appearance. But when the plants are intended to be flowered in pots they should not be grown in them throughout the season, but should be planted out in good soil and an open position, and be lifted and potted when the flower buds are fairly visible. If grown in pots in the summer premature flowering is often induced, and the plants are sometimes "scrubby," but when planted out they grow freely, producing good foliage and numerous excellent flowers. No plants lift better than these do, for, due care being exercised, they scarcely lose a leaf.

A great advantage possessed by these plants over many others for border cultivation is that they are seldom eaten by slugs—a point of no slight importance during a season like the present, when those pests have been so generally destructive. Slugs will eat Chrysanthemums it is true, but not voraciously; they are amongst the last dishes of the molluscs and are only partaken of when other food is scarce. This remark applies to plants grown in borders, as cuttings of Chrysanthemums raised tenderly in heat in the spring are often provokingly

nibbled off, but even then a few young Lettuces or African Marigolds would be preferred by the slugs.

For the reasons stated and for the purposes named this early type of Chrysanthemums is worthy of much more attention than it generally receives, and by adding the best varieties of the section to the later incurved and Japanese varieties Chrysanthemums may be had in plenty for upwards of four months.

A few of the best and most distinct of those that have been for some time so attractive in the beds at Slough are the following:—

**YELLOW.**—*Précocité*.—Flower of medium size; florets slightly incurved, bright yellow; very floriferous. *Jardin des Plantes*.—Very early; florets pale straw colour. *Andromeda*.—Similar to *Précocité*, but lighter in colour. *Gold Button*.—Flowers small but neat; florets pale yellow when fully open. *Hendersonii*.—Flower rather larger and fuller than the last; florets a fine bronze yellow.

**WHITE.**—*Jardin des Plantes*.—Flowers large; florets pure white. *Nanum*.—Flowers large and full; florets creamy white; valuable for cutting.

**PINK.**—*Cassy*.—Flower of medium size but good substance; florets pink. *Madame Pecaul*.—Flowers large and full; florets incurved, purplish lake.

**MAROON.**—*Frederick Péié*.—Flowers of medium size; florets light maroon or chestnut colour; effective.—J. W.

#### MAGNUM BONUM POTATO.

MR. WARREN has given the results of his trials with samples of this Potato which he obtained under two different names; but he does not state that he obtained Suttons' Magnum Bonum direct from Beading nor Carter's Magnum Bonum direct from Holborn. After considerable experience with new vegetables sent out by different firms I have found it important to procure varieties to which vendors' names are prefixed direct from those who select the varieties and adopt them as their own, for they then take care to select good stocks so as to maintain their reputation. A mere name attached to a Potato will not affect its growth, but good soil and culture, with careful selection and management of the "seed," will do so; consequently those dealers who have "specialities" to dispose of adopt the measures necessary for producing them in the best form and condition.

I remember when Suttons' Redskin Flourball was introduced obtaining a small supply from Reading. The produce was carefully preserved and prepared for planting. The following year more seed was had from Reading and the same quantity of "Carter's Improved" Redskin Flourball from Holborn. Suttons', Carter's, and my own home-raised stocks were planted together. There was practically no difference in the crops obtained from the purchased seed, but "Carter's" selection grew rather the stronger of the two, yet the growth resulting from my own carefully chosen and prepared seed, and also the crop produced, were clearly different—the growth being stronger throughout and the crop heavier. The following year the three "varieties" were kept separate, the seed of each being selected and stored with care, and at digging time there was absolutely no difference in growth or crop, the three having merged into one variety. After that they were mixed and grown for the pigs, for the soil did not produce them fit for the table. They continued to be grown, the seed neither being selected with special care nor stored in a special manner. The crops appeared to get worse yearly, and the variety to degenerate, until it was discarded. So much for names and "specialities," and the importance of selecting and carefully preparing the seed.

Since Magnum Bonum has achieved such a high reputation it would be well if it could be stated to whom the credit is due of having raised the variety.—AN OLD GROWER.

I wrote a letter in your paper contrasting the yield, &c., of some Magnum Bonum Potatoes from Suttons' and Carter's. It so happened that I grew Carter's Magnum Bonum Potatoes for two years running, and I was much struck with their superior qualities both as to yield and more particularly their freedom from disease. I remember that on the last year I had one plot of Potatoes near to them which were badly diseased, while Carter's Magnum Bonums had no trace of it, and it was for these reasons that I thought them so suitable for garden cultivation. I do not think much reliance can be placed on a small isolated experiment such as has been mentioned as to the quality between two rival seed-growers, the result of which

may have been affected more or less by various circumstances which we are all, perhaps, familiar with, and more particularly during such a season as we have had. No doubt Suttons' things, from the high name they carry, are excellent; but if their Magnum Bonums will really on a full trial give better results than Carter's it would be a wonderful Potato.—FRANCIS FRANCIS.

If your correspondent Mr. Warren had purchased his seed of Messrs. Carter & Co., of the stock I grew last year expressly for that firm, he could not but have been convinced of the superiority of the variety. As was published last year, I took 117 sacks off two acres of farm land after barley once ploughed, the tubers being as clean and as handsome as Snowflakes. The small ones from the above stock were sold to a man in the village, who retailed them to the poor around, and they have this year a marvellous crop: where all others are quite destroyed by disease these are all sound and good. Mine are equally sound.—CHARLES PENNY, *The Gardens, Sandringham*.

[We have several other communications on this subject, some advocating the merits of Messrs. Suttons' variety and others that of Messrs. Carter. We see no benefit to be derived from the publication of either of them, and we must decline to occupy our pages with discussions on the "stocks" of rival tradesmen.—EDS.]

### NOTES AND GLEANINGS.

THE summer now drawing to its close will be memorable for the extremely low temperature that has prevailed, for heavy storms causing serious inundations, and for showers rather than sunshine occurring between the storms. Under such conditions many crops have grown freely, but those which have been grown for PRODUCING SEED have in the great majority of instances proved little less than total failures. Even the grain harvest is not yet secured, and much corn cannot now ripen. Anticipating what must inevitably follow—a great scarcity and consequently higher value of various garden and farm seeds, the London Wholesale Seed Trade Association have with good reason found it desirable to direct attention to the general and almost complete failure of many important seed crops, enumerating wrinkled Peas, Cauliflower, Carrot, ridge Cucumber, Leek, Lettuce, Onion, Mangold Wurtzel, and Scotch Turnip. We knew from experience and observation of the growing crops in various districts of this country how great the failure must be. The loss incurred by the growers must be very serious, and merchants must experience extreme difficulty in procuring supplies. Seed of the best and most popular varieties of vegetables cannot be obtained from the Continent, for those varieties are not grown there in any considerable quantity; and if they were, the unpropitious weather that has to a great extent prevailed in continental seed-growing districts must have seriously affected the crops. It may be stated with a considerable amount of confidence, that no season during the present generation has proved so disastrous to seed-growers as the present one, and no one, on reflection, can justly complain if prices for many garden and farm seeds for next year are not markedly higher than the usual quotations.

A CORRESPONDENT, referring to the POTATO CROP near PETERBOROUGH, observes that Early Rose has been the best cropper, with about 40 per cent. diseased; the worst has been the Scotch Regent, nearly all bad. Schoolmaster, Porter's Excelsior, King of Potatoes, and Aylesbury Kidney produced good but not heavy crops, and about 20 per cent. bad. All field crops in the neighbourhood are very much diseased, and the yield below the usual average.

THE following CHRYSANTHEMUM SOCIETIES will hold their annual Exhibitions on the dates annexed:—Birmingham, November 26-27; Hackney, at the Royal Aquarium, Westminster, November 19-20; Brixton, November 13-14; Southampton, November 18-19.

IN the LARGE VINERY at Chiswick the Vines are bearing a good crop of Grapes, that have by judicious management coloured and ripened well despite the unfavourable weather that has prevailed.

ALTHOUGH it is surprising how green and fresh the foliage remains upon many trees in the vicinity of London, yet some are fast assuming their autumnal tints, and impart a seasonable beauty to our gardens. One of the most attractive trees in autumn is LIQUIDAMBAR STYRACIFLUA, specimens of

which at Kew are now bright with the varied tints of yellow and crimson. *Leucothoe racemosa* and *L. coriacea* also add considerably to the beauty of our shrubberies, the leaves of the former becoming bright scarlet, and the latter a somewhat duller shade.

THE Rev. W. F. Radclyffe has communicated the following note relative to ROSES to the *Dorset County Chronicle*. "The first bloom was the finest I have had in twenty-seven years both for size and quantity. The plants bloomed more freely than I ever knew them to do, which is extraordinary, as we have had no sun. They then dropped all their foliage, and have now produced more, but too late for much effect. I found over two hundred Roses had their roots much decayed by the continuous rains without heat or evaporation. I have bought 244 to supply their places to-day (October 8th), at the Dorset Nurseries. They are good plants and do Mr. Blandford great credit."

A GOOD stock of DWARF SCABIOUS in pots would be found of great value for conservatory decoration in late autumn, also as yielding a supply of flowers for cutting at a season when there is not much variety. A number are grown at Gunnersbury Park for these purposes with satisfactory results.

DURING a recent visit to the well-kept gardens attached to GUNNERSBURY HOUSE we noticed an extremely fine specimen of *Cycas revoluta*, which for symmetry and healthy vigour can scarcely be surpassed. This is an important addition to the handsome plants with which the intelligent gardener, Mr. Hudson, obtained such high honours at several London exhibitions during the past season. The general health of the plants is remarkable, partly owing no doubt to the care Mr. Hudson exercises in preventing the ravages of insects. The Peach trees, &c., are occasionally syringed with water in which a bag of soot has been suspended, and the good effects of the practice are evident in the dark green healthy foliage. A new Vine border there has a concrete bottom, over which transverse rows of ordinary drain pipes are closely placed, communicating with an outfall in front. This method enables the air to circulate beneath the border, and also permits all superfluous moisture to escape freely.

MR. R. IRWIN LYNCH, late Superintendent of the most important department in the Royal Gardens, Kew, has been appointed Curator of the University Botanic Garden, Cambridge, and he enters on his duties there this day (Thursday). Mr. Lynch has an extensive scientific knowledge of plants, and is also a skilled cultivator. By his diligence he has fitted himself for the position he now occupies, and by his general department has commanded the respect of his colleagues and coadjutors in the celebrated gardens in which he has been employed so long and successfully.

WE have received flowers of a new VIOLET from Mr. George Lee of Clevedon. The leaf resembles that of the common *V. odorata*, and the perfume is, if possible, even more intense than that sweet Violet. The colour of the new variety is bluish veined and suffused with lilac, and it is named "argenteaflora." The flowers are single, half an inch in diameter, and the flower stalks 6 inches in length. Mr. Lee describes it as a profuse and continuous bloomer, the flowers in winter being nearly white and larger than those produced now. The hardiness, freedom, and charming and distinct colour of this variety, together with its delightful perfume, must render it a great favourite and a valuable acquisition.

THE meetings of the LINNEAN SOCIETY during 1879-80 will be held on the following dates:—November 6th and 20th; December 4th and 18th; January 15th; February 5th and 10th; March 4th and 18th; April 1st and 15th; May 6th and 24th; June 3rd and 17th. The chair will be taken at 8 P.M. on each occasion, except on May 24th, the anniversary meeting, when 3 P.M. is the appointed hour.

It has been decided to CLOSE THE HAILSTORM RELIEF FUND on November 2nd, and it is the desire of the Committee that any subscriptions not yet sent in may be remitted without delay. At a meeting of the Committee held on the 14th inst. the sum of £800 was voted for relief purposes on the recommendation of the Investigation Committees. When these were appointed, the Executive Committee, finding that the subscriptions announced represented but a fifth part of the aggregate amount of losses sent in by sufferers, instructed the Investigation Committees to confine their labours to ascertaining the actual amount of glass broken, specially recommending the most deserving and necessitous cases. These returns having been made, were duly considered in Committee,



and the sum above named was voted. The aggregate quantity of broken glass was found to be very large, and as the amount at the disposal of the Committee would not admit of relief being administered according to a uniform scale, it was resolved to divide the applicants into three classes according to their needs, the most necessitous to receive 3d. per foot, the next 2d. per foot, and the least needy 1d. per foot. Already all applicants classed as necessitous have been relieved, and the remainder of the sum voted will shortly be awarded. The sum remaining over at the close of the fund will be further distributed *pro rata* among the sufferers, as in the case of the Hailstorm Fund of 1876. A balance sheet will then be struck, and the Committee will bring their labours to a close.

THE October number of the "Journal des Roses" contains a plate and description of the fine old Rose *BARONNE PREVOST*, accompanied by the following history:—"The little village of Yebles, in the Canton of Mormant (Seine et Marne), is the birthplace of the Rose *Baronne Prevost*, where it was raised by the celebrated Desprez, who dedicated it to the sister of his friend M. Guenon, the great raiser of Dahlias at Voise-non, near Melun. On the 27th of July, 1841, M. Desprez disposed of this valuable acquisition to M. Cochet, sen., for 100 francs, and it was sent out by the latter in the autumn of 1842."

MR. L. POINTON, foreman to Mr. J. Sherratt, Knypersley Nursery, has been appointed gardener to R. Heath, Esq., M.P., Biddulph Grange, near Congleton.

WE have received the second edition of "NOTES ON LILIES AND THEIR CULTURE," by Dr. Wallace, which contains a very large amount of valuable information in relation to those beautiful plants. It is in a great measure a compilation of the writings of numerous English and American authors, whose papers have appeared from time to time in the horticultural periodicals, revised by Dr. Wallace, who has also contributed several chapters. The nomenclature is generally accurate, and the cultural instructions reliable. The names of species and varieties are spelled throughout the work with capital initial letters—a practice which is by no means general or desirable; and sundry little inaccuracies in orthography are noticeable, such as Burbridge for Burbidge, Batemannii for Batemannia, Chaixii for Chaixii, &c. The illustrations are numerous and represent all the principal Lilies and the most distinct bulb forms, the latter having been originally drawn by Mr. F. W. Burbidge. The book will prove very useful to amateurs and others engaged in the cultivation of this attractive class of plants.

#### SEASONABLE NOTES.

AT the beginning of the winter season it may be profitable to be reminded of the requirements of some commonly grown and indispensable plants. Much depends on the plant houses, whether they are watertight, light, and airy, or not; and also the treatment the plants may have received during the past months. Plants which grow well out of doors during the summer months, if expected to continue growing or to flower throughout the winter, will in many instances require artificial heat. For instance, *Bouvardias* which have been planted out during summer are now coming freely into flower in a pit with a temperature of 50° to 55°, but later on they will stop flowering unless a higher temperature is given them. Winter and spring-flowering *Begonias*, which have also grown out of doors till lately, will shortly require a stove temperature. To *Calla aethiopica*, *Geraniums*, *Carnations*, *Pelargoniums*, *Cyclamens*, and *Primulas* the same remarks apply. In a new and light vinery I have, amongst other plants, some young *Pelargoniums* for winter flowering; these are coming on slowly and sturdily with abundant ventilation, and a little heat when necessary, whilst in other old-fashioned structures a fire is necessary to prevent the trusses damping off. There are other plants which do not require artificial heat to any extent, such as the pretty and useful *Eupatoriums*, *Camellias* which have been brought on early, *Roman Hyacinths*, and other early-flowering bulbs. *Chrysanthemums* in damp dull weather may in many places require a fire pretty constantly to keep the flowers dry, but in all these cases the less artificial heat employed the better.

Of more importance than flowering plants in many gardens is wintering store plants, either as young-rooted cuttings or old plants. Last winter showed up the weak points of the winter treatment of *Ageratums*, *Verbenas*, and *Iresines*. It cannot be too fully impressed on those who have a stock of these plants to winter that they must be kept growing, though ever so

slowly. Unless there is a certain amount of root-action induced by keeping the soil in a moist state, and the atmosphere of the house at a temperature to allow the leaves to perform their functions properly, there is very little likelihood of the plants wintering safely. Some of the tender *Carnations*, such as *Souvenir de la Malmaison*, require to be kept growing throughout the winter. *Calceolarias*, *Violas*, *Pentstemons*, and other hardy florist flowers cannot be kept too cool, Intermediate Stocks perhaps excepted.—R. P. B.

#### ACANTHACEOUS PLANTS FOR WINTER

##### FLOWERING.—No. 4.

##### ERANTHEMUM.

AN extensive genus, chiefly characterised by its salver-shaped corolla, unequally lobed limb, and two fertile stamens. It contains a great number of very fine ornaments for the stove. Though freely interpreted the name signifies Spring Flowers, or Flowers of Spring, we have nevertheless a considerable number of species which put forth their flowers and gladden our hearts with their beauties during the duldest and dreariest days of winter. They are all very free-growing plants, are easily struck from cuttings, and should be renewed annually. Pot in leaf mould, peat, loam, and sand; drain well, and supply liberally with water. Frequent use of the syringe will be necessary through the summer to keep down red spider.

*Eranthemum Andersonii*.—A somewhat sparingly branched shrub. Leaves oblong lanceolate and obtusely acuminate, 6 to 9 inches or more long, rich bright green on the upper side, paler below. Flowers produced in fascicles on erect terminal spikes, which are about the same length as the leaves. Corolla tubular; limb spreading, white; the middle lower lobe profusely sprinkled with purple. It blooms during November and December. Native of the East Indies.

*E. asperum*.—This is frequently to be found under the erroneous name of *E. asperum*. It is a very distinct and beautiful species, although evidently allied to *E. Cooperi* and *E. tuberculatum*. The stems are somewhat obtusely four-angled and much branched. Leaves ovate and bluntly acuminate, waved at the margins, about 3 inches long, deep green on the upper side, paler beneath. Flowers arranged in a rather loose terminal fascicle. Corolla tubular, very slender, upwards of 2 inches long, white; limb unequally five-lobed, flat, upwards of an inch in diameter; upper lobes white, freckled with purple; lower one, which is largest, intense deep purple at the base; the margin white, sprinkled with purple dots. It blooms during February and March. Native of the Solomon Islands.

*E. hypocrateriforme*.—The present species is perhaps one of the very handsomest in the whole genus. It, however, is scarcely a winter-blooming kind, we having never seen it in flower earlier than April. It is a somewhat robust-growing plant, with four-angled stems and branches. Leaves opposite, ovate, obtusely acuminate, coriaceous, about 3 inches long, deep green on the upper side, lighter below. Flowers produced upon the apex of the shoots in a dense spike, with two additional axillary spikes at the base, forming a large spreading head. Corolla tube slender, slightly bent, more than an inch in length; limb spreading, about the same width as the length of corolla, bright red, which becomes more intense towards the base, where the lobes are all spotted with black, the reverse side being a pale sulphurous yellow. Native of Sierra Leone.

*E. laeviflorum*.—Another very fine species from the Fiji Islands, where it is said to attain a height of 4 feet and upwards. It, however, flowers abundantly with us when about 18 inches. Leaves opposite, oblong ovate, bluntly acuminate, 4 to 8 inches long and 2 to 5 inches broad, the upper leaves being the smallest, deep green above, paler beneath. Flowers produced in axillary fascicles in great profusion. Corolla tube long and cylindrical; limb five-lobed, spreading, upwards of an inch in diameter, intense rich deep purple in colour; stamens exerted, the yellow recurved anthers affording a pleasing contrast. It blooms during November and December.

*E. crenulatum grandiflorum*.—A very variable species, the present form being a most desirable one. It is a free-growing plant of moderate size. Leaves ovate acuminate, 3 to 6 inches long, bright green. Racemes terminal, longer than the leaves, erect. Corolla funnel-shaped, nearly 2 inches long; tube white; limb rosy lilac. It blooms during midwinter. Widely distributed throughout India.

*E. palatiflorum*.—Of this species there are two varieties, one having the limb bright scarlet with a yellow spot at the base of the lower lobe; the other soft lilac, with the same yellow

spot as in the scarlet-flowered form. The leaves are some 6 inches long, lanceolate and blunt-pointed, deep green, irregularly blotched with creamy white. The same variegation obtains in both varieties, so that those who have variegated leaves have a double enjoyment in this plant. It blooms during March and April. Native of Silhet.

*E. tuberculatum*.—A beautifully delicate and ornamental plant. It forms a much-branched compact little shrub, the stems and branches being covered with small tubercles and

clothed with a profusion of small sub-ovate dark green leaves, which are slightly notched at the apex. Flowers erect, solitary, axillary. Corolla tubular, slightly bent, very slender, white; limb flat, an inch in diameter, five-lobed, pure white. The erect flowers are so freely produced as almost to conceal the foliage and give the plant the appearance of a snowflake. It blooms during the early spring months. Native of the South Sea Islands?

*E. cinnabarinum*.—This is a somewhat lax-growing plant,



Fig. 35.—ERANTHEMUM COOPERI.

and therefore strict attention must be given in the matter of pinching and stopping in order to produce a well-furnished plant. Leaves oblong lanceolate and acuminate, with just the slightest pubescence on both sides; the upper side deep green, paler below. There is a variety of this plant called *ocellatum*, in which the leaves are irregularly spotted with creamy white. Racemes terminal, with the flowers all turned the same way. Corolla tube slender, about an inch long and pale red in colour; limb flat, nearly  $1\frac{1}{2}$  inch in diameter, deep cinnabar red, with a small white eye and deep blood red blotch at the base of the lower lobe. It blooms during the spring months. Native of Burmah.

*E. Cooperi* (fig. 35).—This is usually considered a summer-flowering species, but we have had it bloom beautifully during March and April; indeed with a little management it may be had in bloom all the year round. It is a very free-branching compact-growing plant. Leaves 3 to 5 inches long, narrowly lanceolate, with deeply lobed margins, deep green above, much paler below. Flowers produced in pairs from the axils of the leaves. Tube of corolla slender, upwards of an inch long, white; limb five-lobed, all white saving the central lower one, which is beautifully marked with lines of purple dots. Native of New Caledonia.

*E. pulchellum*.—A very old inhabitant of our plant houses,

discarded long ago by the older gardeners and amateurs to make room for novelties, and now scarcely known by many young gardeners. Yet whenever seen the brilliant blue flowers rivet the attention of every beholder; and being a winter-flowering plant we would fain induce our readers to take it in hand, grow it well, and they will find it one of the most brilliant ornaments of the stove. If not carefully tended in the matter of stopping it is apt to become rather straggling; but as every shoot produces a large terminal spike of flowers, the more shoots produced the greater the effect. Leaves petiolate, broadly ovate, tapering to a blunt point; the surface somewhat bullate, intense dark green above, paler beneath. Spikes terminal with imbricate bracts. Flowers tubular, with a flat limb, which is rich vivid blue in colour. It blooms during December, January, and February. Native of the East Indies.

### BLACK PRINCE STRAWBERRY.

I THINK it is not the first time I have written favourably of this Strawberry. Some growers and writers, if they can only obtain a few monstrous fruit on any other variety, evidently think it right to condemn Black Prince as producing fruit of only medium size; but I venture to say we have had a greater weight of fruit from this variety both in pots and planted out than it would be possible to obtain from any other. It produces fruit in masses, and in such a season as this it not only ripens earlier than any other but was more satisfactory altogether. It produces fruit freely under any circumstances or at all times, and it might be had in fruit every month of the year. We have the same plants in pots bearing ripe fruit now as we gathered from in the months of March and April last. I sometimes hear amateurs complain that their Strawberry plants produce plenty of leaves but no fruit. Such a complaint would never be heard of if Black Prince was more grown.—  
A KITCHEN GARDENER.

### SHEFFIELD GARDENS AND GARDENERS.—No. 2.

As previously intimated no attempt will be made in these notes to give elaborate details of the gardens visited, but only their general character will be glanced at, briefly recording anything specially noteworthy or suggestive of being useful. There is something to be learned from every garden large or small—some point of practice the success of which proves its worth, or some example of a contrary nature that is certainly not less useful to note as something *not* worthy of adoption. The gardens will be referred to much in the order in which they were visited, commencing with

#### THORNBURY.

Situated in a very commanding position is this, the residence of F. T. Mappin, Esq., a gentleman who has filled the highest municipal offices and been a benefactor to the town. Being nearly on the summit of a hill of considerable altitude the mansion overlooks a most picturesque valley, from which the hills beyond rise and recede until they vanish into azure-tinted curves. The grounds are on a steep hillside, so steep that the drive takes a long detour, and even then the mansion is not reached except through a rather deep "cutting." The middle of the drive only is gravelled—about 2 feet of the sides being of asphalt for accelerating the outflow of the water that, during storms, rushes from the higher ground with a force that no gravel could resist. The grounds were "laid out" by Mr. Marnock, who has executed his work admirably. There is much that is artificial, but the mere artificiality is almost lost by the close manner in which Nature has been followed; and the result is a few acres of pleasure grounds highly worthy of the name. A lawn of considerable extent and agreeably undulated contains large beds of shrubs and marginal mounds, and this fine lawn is not broken up into patches by narrow gravel walks.

Nowhere in the district is such a fine collection of shrubs, interspersed with Conifers and relieved by fine old Oaks, to be seen as at Thornbury; indeed in few places are evergreens found in better order. That Conifers thrive so well is proof the air is not impure, and the condition of the entire collection manifests that the specimens are much valued by the owner, and managed with care and skill by the gardener. Every shrub, and there are many hundreds, is a handsome specimen, or being formed into one, each apparently receiving the same care as if it were a specimen plant being prepared

for exhibition. No approach to crowding is permitted; the requisite amount of pruning is done to maintain symmetry without undue formality, and the borders are manured to keep the specimens in the rich colour indicative of good health. Nearly all kinds of shrubs are represented; but Portugal Laurels predominate, and fine they are. Conifers are also numerous, the specimens of *Cupressus virginiana* being particularly handsome, as also are several varieties of *C. Lawsoniana*. *Cryptomerias* thrive fairly well, but *Wellingtonias* make rather slow progress, the soil not being sufficiently deep to afford them the sustenance they require. Some of the Pinuses a year or two ago assumed an unhealthy aspect; growth ceased, the foliage turned brown, and much concern was felt respecting them. On examination their roots were found to be infested with a fungus. The gardener at once had the soil removed from them as much as possible, gave them a heavy dressing of freshly slaked lime, and replaced the soil. The effect was magical; the fungus was destroyed, growth commenced, and the specimens were saved. The remedy so promptly applied and so successful merits record; and the mode of shrub culture practised is worthy of more general adoption.

I pass on to note one or two mistakes, not greatly felt at Thornbury perhaps, still they may be mentioned. They are not, however, in the flower garden—a terrace where carpet bedding is very well done; nor in the conservatory, a capacious structure erected by Messenger, in which all the plants look well, including those in an enjoyable tropical section; nor in the vineries, where useful crops of Grapes are produced; nor in a structure devoted to Tomatoes, where a splendid crop of Vick's Criterion is ripening; nor amongst plants generally, for *Camellias*, *Azaleas*, &c., look well, as do the Orchids, especially *Stanhopeas* and a fine flowering specimen of *Renanthera coccinea*, also grand examples of a superior variety of *Imantophyllum*. For the first mistake made we must pass to a Peach house, where on a narrow border in which the trees were planted a rockery has been formed and planted with Ferns. The two Peach trees have never flourished since, and in the event of their decay a third tree has been planted beyond the rockery and its stem bent over it to the wall. This tree is growing freely, so it is plain that large stones placed over the roots of Peach trees do not form a good "top-dressing." The next mistake is more important—it is erecting a fine curvilinear span-roofed house on the Cranston principle, and planting it with Peaches and Nectarines, and not providing any means of heating it when necessary. In ordinary seasons the fruit may ripen, but during a summer like the one just closed it cannot do so, nor can the wood become matured. A few Pear trees near one end of the house are ripening their crops well, and suggest that if half the house had been planted with Pears the structure would be more useful. In the case indicated local obstacles prevented the piping in other structures being extended round this fine Peach house, where hundreds of fruit remain hard, and even if a few of them ripen they must be very deficient in flavour. The lesson deducible from this failure is never to erect a house of this nature for Peaches, in cold localities especially, without providing the means for ripening the crops.

The kitchen garden is small and well cropped, the reserve ground containing a fine stock of hardy plants for the ornamentation of the terrace flower garden in spring; but most of the vegetables are grown in other gardens at some distance from the mansion.

The gardens at Thornbury are thoroughly well managed by Mr. W. K. Woodcock, a skilled and industrious gardener, and a very useful man in the district, as it is his pleasure to endeavour to foster the advancement of horticulture and other worthy objects.

#### OAKBROOK.

By his princely munificence the owner of Oakbrook, Mark Firth, Esq., has had the distinguished honour of entertaining Royalty on more than one occasion. Four years ago the Prince and Princess of Wales were Mr. Firth's guests on the opening of Firth Park. Last year the Crown Prince of Sweden visited Oakbrook, and during the present week Prince Leopold was entertained there on the occasion of his opening the new University Buildings which Mr. Firth has erected and presented to the town.

It appears to be the custom of Royal personages to leave mementos of their visits to Oakbrook by planting shrubs on the lawn. The Prince and Princess of Wales planted four of Fisher's Golden Irish Yews, the Crown Prince of Sweden a Golden Queen Holly, and probably Prince Leopold has followed

the practice of his predecessors, so that Mr. Firth will soon have quite a collection of Royal shrubs. The Golden Irish Yews referred to are probably the finest specimens of their kind in any private garden. They were planted on well-prepared stations, and have grown in the most satisfactory manner. They now exceed 6 feet in height and are well furnished, and surpass the specimens near the grand conservatory at Chatsworth. This Yew, which originated in the Handsworth Nurseries, will prove a fine object on lawns. It appears to grow as freely as the normal green species, while nearly every leaf is margined with yellow, and the specimens when associated with evergreens resemble pillars of gold.

Oakbrook presumably derives its name from the Oak woods that no long time ago covered this almost ruggedly undulated district, and the watercourse which rushes down the valley. Many trees still remain clothing the sides of the hills and even the summits of some of them, making the dells appear deeper and richer in their mantle of foliage. Although almost within rifle shot of the smoky town the scenery here partakes of a wild natural grandeur, reminding one of a fine view in Scotland.

Mr. Firth appears to have been satisfied with Nature's works, and has not indulged in many artistic touches in the adornment of his grounds. There is very little flower gardening, and plants are only grown under glass for ordinary decorative purposes and for supplying flowers for cutting. Fruit is more in request, and Mr. Hall, the gardener, is making preparations to meet the demand. New Vine borders have been made, and the young Vines are bearing good crops and give promise of producing better. Golden Queen is fine in bunch and berry, but is not of good quality. Black Morocco has produced fine bunches plentifully, but the berries have not set and swelled well, a common fault with this imposing Grape. These three varieties will be replaced by others. Madresfield Court is fine and the berries do not crack. Is not this evil the most prominent when the Vines are young and strong, and crops light? The crop is not light at Oakbrook. Lady Downe's is very good, and Black Hamburgs have yielded a great number of useful bunches. Late Grapes have their stalks placed in bottles of water, and are preserved in the fruit room; any that are wanted for use within three weeks have their stalks simply inserted in Potatoes and suspended in the room.

A large and excellent range of peaches merits notice. Although the aspect is unfavourable no provision was made for heating the houses. For seven years no fruit was gathered; piping was then placed in the houses, and every year since large and valuable crops of fine fruit have been produced. The trees are very fine and in superior condition. Although in fall leaf they were pruned for the winter, or at least only a few of the tips will need to be cut from the shoots when they are tied to the trellis after the leaves have fallen. Mr. Hall observed that he could not see the use of leaving the trees crowded with wood and foliage after the crop was gathered; he therefore pruned them, and the result is that the wood for next year's crop is maturing thoroughly and perfecting bold buds. Advice of this nature has been frequently given in "Work for the Week," and those who have followed it intelligently will find, or have found, the advantage of the practice.

Very little need be said respecting the outside department. The kitchen garden of three acres being some distance from the mansion was not visited; but on a very high south wall, the boundary of the home enclosure, some Pears were bearing good crops, but the fruit small and late. Amongst the pyramid and bush trees two Victoria Plums were bearing prodigious crops—ten times more in fact than any ten trees of other varieties were yielding. The fruit is preserved just as it changes colour. The Parsley-leaved Bramble is grown and valued for the heavy crops of fine fruit that it produces; it is both useful and ornamental.

Mr. Hall was a pupil of Mr. Frisby, a Lincolnshire gardener of high repute, and the practical knowledge he obtained at Blankney is being turned to profitable account at Oakbrook, for he is managing the gardens well.—J. W.

THE GLADIOLI JUDGING AT NEWCASTLE.—Allow me to enter my protest against the remarks made by the Rev. C. P. Peach (page 248) regarding the Gladioli judging at Newcastle. I have seen many Gladioli in my time, and have both grown and exhibited them; but when I saw Mr. Spoor's stand, who so worthily took first prize, I considered it was the best stand I had ever previously seen. Regarding decoration, I consider no flower more needs it than the Gladiolus. I used to set mine

up with Asparagus and own foliage; but to set aside the flower for the sake of foliage, and especially foliage that was not Gladiolus foliage, would, I think, be a great mistake.—J. WITHERSPOON.

### THREE FINE SINGLE DAHLIAS.

It was in one respect fortunate that our Dahlias were mostly destroyed last year, because I lost the few single varieties I had, and had to apply to a lady gardener, who makes herself happy growing plants not commonly grown, for a few plants to start with again. Amongst those sent were *Dahlia coccinea*, *D. sarantiosa*, and a single white form without name. These three are extremely beautiful, the white particularly so; in fact one of the finest white flowers I have ever seen. I shall be greatly obliged to have its name should any of your readers be acquainted with it. The flowers are doing good service just now in the way of furnishing large flower glasses, the foliage and buds of the Dahlias being freely used in arranging. Most flowers look best arranged amongst their own foliage, though there are some which will not do, and in other cases the foliage cannot be spared; but a vase furnished entirely with single Dahlias set in Dahlia leaves and buds is both attainable and beautiful.—R. P. BROTHERSTON.

### PHOLIDOTA IMBRICATA.

THIS rare little Orchid is now bearing several of its peculiar and somewhat pretty spikes of flowers in one of the Orchid houses at Gunnersbury Park, the seat of Baron Rothschild. The plant is suspended in a small basket, and, like everything under Mr. Roberts's excellent management, it looks extremely well. The species is a native of various parts of India, in the same mountainous districts where *P. pallida* abounds—viz., Sylhet, Chittagong, &c., where it is found growing on the stems and branches of trees. The flowers are small, of a yellowish tinge, and are produced in dense, pendulous, slender flattened spikes, each flower being subtended by a small, brownish, acute bract, from which character the specific name is derived. The appearance of these spikes is suggestive of the *Dendrochilums*, but the flowers are devoid of the fragrance that distinguish those charming little plants.

There has been some confusion in reference to *P. imbricata* and *P. pallida*, for the latter was figured and described as the former in vol. xxi. of the "Botanical Register," but the mistake was subsequently corrected, and the one originally described was named *P. pallida* from its flowers being white. There are also other differences between the species which are patent to the most cursory examination; for instance, the bracts in *P. pallida* are blunt, while they are acute in *P. imbricata*, and the spikes of the former are loose, whereas in the latter they are dense. The species under consideration has also the reputation of being more easily cultivated than the other. The *Pholidotas* are allied to the *Ornithodiams*, and included in the tribe *Malaxideæ*. About ten species are known in this country, chiefly natives of the East Indies, and all have been introduced since 1820.—L. C.

### FRUIT JUDGING AT NEWCASTLE.

It is the old story: exhibitors continue to see more charms in their own produce than they do in that of their brother competitors. Last autumn I endeavoured to get some of our horticultural authorities to arrange an exhibitor's guide, but failed. This season has again evidenced the necessity of a guide. Regarding the judging of the fruit at Newcastle, my impression at the time was that it was as near correct as possible, but that it was so close had either the equal seconds or the third been able to improve a single dish, then that stand would probably have taken first prize. Of the Newcastle Committee I think we may safely say that never did a more worthy body of gentlemen undertake the arrangement of an exhibition, nor succeed in establishing an exhibition more worthy of public patronage, and consequently in furthering the advancement of horticulture generally. It is my especial faith in these gentlemen's good intentions that prompts me this autumn to again return to fruit judging, as I think I can make a suggestion that they will appreciate and possibly adopt.

I considered that the schedule in the fruit department at the autumn show was too weak, but the Newcastle prize cards and the speedily printed return of the Judges' awards were as near perfect as possible. Now my suggestion is, and my hope is, as



the Committee go in for printing, that consequently they will adopt a further printed card to be placed by the exhibitor on his collections of fruit. To further aid explicitness the schedule should state the number of fruits that constitute a dish, and also give a list of the varieties of fruit an exhibitor can choose from. The proposed card for the exhibitors' and also judges' guidance must be printed in columns. The varieties of fruit admissible; next, a column stating the number of fruit to be placed on each dish; a third column stating the number of points each dish is to count if the said dish be perfect; next, to the right of the card, there must be a blank column on which the judge or judges will mark the number of points they consider each dish worthy of. The adding-up of these points will tell the tale; and when the exhibitor comes to see his award he will see the exact value the judges have placed upon each of his exhibits, and he will also see the value of each dish in the different collections.

This arrangement I do think, whilst it would tend to diminish regrettable grumbling, would also tend to general enlightenment as to the good properties of fruit; and I do not think that gentlemen, even so worthy and so high in their profession as the Messrs. Coleman and Johnston, who were the Judges at Newcastle, would thereby lose a particle of dignity.

The following is the form of card I propose, and to illustrate exactly my meaning I have filled up the judges' column according to my opinion of the collection of fruit exhibited by Mr. Laidlaw.

Each dish to contain	Fruit admissible.	Points allowed.	Judges' award.
1	Pine	10	8
2	Bunches of Black Grapes	8	8
3	White ditto	8	8
4	Peaches	6	4
5	Nectarines	6	4
1	Melon	6	3
6	Figs	6	6
6	Apricots	4	0
6	Plums	4	4
6	Pears	3	0
6	Apples	2	0
1	Pint Strawberries	3	0
1	Pint Cherries	3	0

Mr. Laidlaw first with ..... Points 45

Judged by this rule I found Mr. Westcott's total 44 points. Of course when the cards are printed the last column must be left blank to be filled in by the judges.—J. WITHERSPOON.

## WORK FOR THE WEEK.

### FRUIT HOUSES.

Vines.—With so many good varieties of late Grapes that we now possess early forcing is not by any means essential for a supply of Grapes all the year round. The most valuable of late varieties is Lady Downe's; it bears well, and the fruit keeps quite plump and fresh up to May. In quality it is unsurpassed, for when ripened in strong heat the Muscat flavour is more highly developed than in a low temperature. This, as well as all late Grapes, owes much of its late-keeping properties to thorough ripening under the influence of sun and strong heat; in fact, Grapes that are to hang for any length of time must not be ripened in cool vineries. Black Hamburgh, for instance, will not remain in good condition nearly so well if ripened in a cool house as when the fruit is perfected by fire heat, whilst Muscat of Alexandria speedily becomes spotted when not ripened to an amber colour. Black Alicante is an excellent keeper, and always finishes well. West's St. Peter's also finishes well in a high temperature, and though not so imposing in bunch and berry as some others it is one of the best late Grapes. Gros Colman is simply magnificent in appearance, the berries 4 or more inches in circumference, the bunches about 4 lbs. in weight, and when well ripened it is not nearly so coarse and inferior in flavour as it is sometimes represented to be. It requires, however, a longer time to colour and ripen than the majority of late Grapes. Gros Guillaume is really imposing in appearance, the bunches being large and the berries approaching Gros Colman in size; and when well ripened and coloured the quality is good. Trebbiano and Calabrian Raisin with Syrian are good white companions for the preceding, being large in bunch and berry, and when well ripened excellent in quality and good keepers. With these varieties to maintain the supply up to May the necessity of starting permanently planted Vines before December does not arise, unless it is desired to have fresh ripe Grapes at an early date in spring. In that case it is preferable to take the early supply from Vines in pots than to start the permanently planted Vines so early. Vines in pots produce fruit but little inferior to that borne by those planted out, and often better, from the roots being inside; and where there is convenience of affording bottom heat success is certain, providing, of course, the canes are sufficiently strong and well ripened. Where

leaves and stable litter have been prepared as advised in our last calendar they should be placed on outside borders about a fortnight before closing the house, and a quantity of the material introduced at that time to the interior of the house will produce a regular degree of heat and moisture without having to resort so much to fire heat and frequent sprinklings. Vines in pots plunged in bottom heat must not have a greater heat than 65° to begin with, augmenting it by bringing up the fermenting materials to the level of the pots, so as to raise it to 70° or 75° when the Vines are in leaf. Both Vines in pots and early forced Vines have ripened off so late that, except under pressing circumstances, it will be sound practice to defer starting to as late a period as possible. Young Vines that have completed their growth should have a portion of the laterals cut off to admit light and air to the principal leaves and buds, thereby inducing earlier ripening of both wood and roots. Vines in pots not intended for early forcing should be placed under cover, an open shed with a north aspect being suitable, and the pots covered with dry straw or fern. Keep a sharp look-out for decayed berries among ripe fruit; a slight warmth in the pipes when the atmosphere outside is charged with moisture is advisable.

### FLOWER GARDEN.

This is now as gay as at any time during the season, for though a few degrees of frost have affected some of the most tender plants, there has not been sufficient to kill Coleuses and Alternantheras. All Pelargoniums when housed should have a dry atmosphere, but when they are fairly established moisture must be given at the root and sufficient heat (50°) to maintain steady progressive growth. Alternantheras, Coleuses, and Iresines should have a minimum temperature of 60° to winter them successfully. Verbena, Ageratum, Petunia, &c., do well in any light airy position, frost being excluded. Succulents of the half-hardy types, as Echeveria, Sempervivum, Pachyphytum, Kleinia, Aloes, Agaves, Mesembryanthemum, Sedum, &c., should at once be taken up and potted in good open soil, and placed in a dry warm house or pit until established, when they may be removed to a cooler situation with advantage. In the case of spring gardening no time should be lost in placing out the plants, in order that they may have time to become established before winter. Nothing is so cheerless as bare beds in spring, and with the expenditure of a few pounds in bulbs, such as Hyacinths, Narcissuses, Tulips, Crocuses, Anemones, &c., supplemented with Snowdrops, Scillas, Primroses, Polyanthus, Daisies, Violas, Pansies, Aubrietias, Arabises, and other plants, aided by Wallflowers, Nemophilas, and Silenes, will go far to make a garden gay and inviting in spring. Before digging the beds preparatory to planting, a good dressing of manure should be given. Tuberous-rooted Begonias need not be removed until they are affected by frost, and then should be lifted like Dahlias, laid in a shed for a few days to part with superfluous moisture, and afterwards stored away in sand in a place safe from frost until spring. Choice Hollyhocks are not safe in severe winters without protection, and to make sure it is better to winter them in pots in frames, when they can easily be increased by division and cuttings. Now that the lawn mower is not in such frequent requisition noxious weeds, as Daisies, Plantain, &c., disfigure the lawn: these should be extirpated. The recent rains have brought worms to the surface and disfigured it by the soil they cast up. Water the lawn with lime water, which soon brings them out, when they may be swept up and cleared away. This will save much time in sweeping and rolling. Rich velvety lawns are the pride of English gardens; they should be kept in the best possible condition by sweeping and rolling frequently; indeed sweeping and cleaning-up of lawns and walks will be the order of the day for a long time to come, as leaves and worms cause no end of labour. The planting of evergreen trees and shrubs should be proceeded with, commencing with the deciduous species as soon as the majority of the leaves have fallen. All alterations as opportunity offers may be done, such as taking up, levelling, and relaying turf, making fresh walks, and lifting and replanting Box or other edgings; such work done now will be so much time saved in spring.

## TO CORRESPONDENTS.

BOOKS (M. J.).—The "Eatable Funguses of Great Britain" published at this office, price 7s. 6d., post free 7s. 8d., will suit you. We cannot from your description of it name the fungus in your Mushroom house.

ADDRESS (A Subscriber).—As your letter has failed try one to the old address—Mason View, Didsbury, Manchester. If this fails also we can perhaps give you some information that may be useful if you will state your requirements. (A Subscriber).—Rev. C. P. Peach, Appleton-le-Street, Malton, Yorkshire. (A New Subscriber).—If you state your requirements to Mr. Smith, Curator, Royal Gardens, Kew, you will probably obtain the information you desire.

WHITE CLEMATIS (J. P.).—The variety is, we think, either Henryi or Gloire de St. Julien, but we cannot be certain from only seeing a crushed and faded flower. Messrs. Jackman & Son, Woking, are great growers of Clematises, and all the best varieties may be seen in their nurseries.

HOYA CARNOSA (W. H. C.).—The Hoya will grow perfectly well in a conservatory in which the temperature during winter "never falls below 45°." We have seen the plant referred to by Mr. Luckhurst, which is growing freely and flowering profusely on the back wall of a vinery, and the tempera-



ture of the house is probably frequently below 45°. Few plants succeed better in the shade than this does, and it is a little surprising that it is not more frequently seen on the back walls of vineries and conservatories.

**LA FRANCE ROSE FOR WINTER** (*Idem*).—Although this variety is a continuous bloomer and forces very well, you will yet experience some difficulty in producing blooms of it at Christmas. The only mode of doing so is to have healthy plants with well-matured wood, which should be pruned now, but not too closely, placing the plants in a very light and moderately heated house early in November, increasing the temperature as required according to the condition of the growth and advancing buds, if any. Tea Roses may be had in flower at Christmas by this practice, and possibly you may succeed in flowering La France at the same time, but much will depend on the weather. We have not grown this variety for winter flowering, but depend on Tea Roses for that purpose.

**FILBERTS NOT MATURING** (*Ashdown*).—The failure of your Filberts to develop kernels tends to show that your soil is deficient in phosphates and alkalies. A dressing of quicklime and wood ashes will correct this if applied at the rate of a bushel of lime and two of ashes to a square perch.

**GROWING FRUIT FOR MARKET** (*M. D.*).—So much depends on local demands that we are not in a position to answer your questions satisfactorily. We should hesitate to destroy all the Black Hamburgh Vines, as the fruit can be ripened with little expenditure of fuel. Cucumbers when well grown and placed in the market early are profitable, and they travel well to any distance. Tomatoes, too, for which there is an increasing demand, are grown with advantage under glass in many places, strong plants of Tomatoes being ready for occupying the house immediately the crop of early Cucumbers is disposed of.

**LEAN-TO HOUSE FOR ROSES** (*A Lover of Rose Shows*).—Eight feet is much too high for the front of so narrow a house, rather let it be 5 feet—3 of brickwork and 2 of glass. The cheapest way of procuring materials for building such a house is to send the size and length of the sashbars to any of the steam saw mills, and they will supply them with the rabbets made already for the glass, together with the requisite deal scantling for ventilators and doors. Glass can be had from a glass merchant, and is now very cheap; that which you require is 21 oz. seconds, and costs about 18s. per 100 square feet. No front ventilation will be required provided you have ventilators all along the top, and an opening of quite 3 feet wide. Your idea of climbing Roses on the back wall is a good one. Make a low flat stage along the front solely for pot Roses; the height of the stage from the floor will depend upon the size of your plants. A brick flue will answer perfectly well for heating, dry heat being given off by every kind of apparatus. The porous nature of bricks instead of being a source of evil is an advantage, for they absorb moisture when cool and give it off in the form of vapour when heated. This reply is given on the assumption that you cannot employ a horticultural builder; but those experienced in the trade are, of course, more competent to erect better structures than you can in the manner suggested.

**FERTILISERS FOR GARDEN** (*J. W.*).—You will find the best Peruvian guano applied during showery weather as a top-dressing when the crops are in a growing state an excellent fertiliser. It may be applied at the rate of about 2 ozs. per square yard. Superphosphate of lime is also good and may be applied more freely; and you will find nitrate of soda particularly stimulating to such green crops as Cauliflowers, Lettuces, Cabbages, &c., if applied at the rate of an ounce to the square yard. The three fertilisers named, if properly applied, will aid you in producing good crops of vegetables.

**GRAPES NOT COLOURING** (*A. P. B.*).—Your Grapes will not colour now. Overcropping is the most common cause of deficient colour, and although you say your crop is "good but not heavy," it may yet be too heavy for the Vines to perfect. Assuming, however, that the fault is in the soil we should remove a portion from the surface, just baring the roots, and give a heavy dressing of wood ashes and fresh turfy loam, surfacing with manure. The sooner this is done the better, and the additional surface roots that will or ought to be promoted cannot fail to benefit the Vines. You cannot use wood ashes too freely in the surface dressing.

**GRUBS ON PEAR TREES** (*G. F. M.*).—Your Pear trees are attacked by the slimy grub of *Belandria setipennis*, which is very destructive when permitted to become established. It may be eradicated by frequent dustings of freshly slaked lime.

**MAKING CUTTINGS** (*Amateur*).—It is impossible to state how many leaves should be removed from the cuttings, and we can only say generally that, unless in particular circumstances, as many leaves should be removed as would enable the cutting to be firmly fixed in the cutting pot, and if the leaves be large a portion more may be removed or lessened in their dimensions in order to reduce the evaporating surface, success consisting in keeping the cutting healthy and yet preventing it from parting with its stored-up juices; and hence the reason why we cover them with bell-glasses, and shade them from bright sunshine. The more leaves left, provided they can be kept healthy and vigorous, the sooner will roots be formed by the elaboration of fresh material, and the more quickly and without flagging will this elaboration take place the more light the leaves receive. Shading, or diffused light, is essential at first, but the sooner it can be dispensed with the better. Continued too long the shading would make the cuttings weak and spindly.

**PENTAS** (*Parker*).—We are not acquainted with a pure white species or variety, but the flowers of *P. carnea* occasionally change to a bluish white. If a pure white variety is in commerce we will readily record the fact on receiving information from any of our readers to that effect.

**CATERPILLAR** (*L. J. K.*).—It is a nearly full-grown caterpillar of the Swallowtail moth (*Ourapteryx sambucaria*). The imago, or perfect insect, flies about gardens in June, looking ghostly in the twilight. It is the habit of the caterpillar to hybernate, and as the weather grows colder the specimen noticed will probably resort to some sheltered spot, feeding again a short time in the spring. The curious attitude you describe is assumed as a disguise, preventing the caterpillar from being attacked by birds. There are three pairs of feet (retractile) attached to the three segments of the body following the head.

**HERBACEOUS PLANTS** (*A Six-years Subscriber*).—*Achillea aurea*, *A. Ptarmica* plena, *Aconitum pyrenaicum*, *Adonis vernalis*, *Agrostemma coronaria* flore-pleno, *Ajuga genevensis*, *Alchemilla alpina*, *Allium ciliatum*, *A. grandiflorum*, *A. neapolitanum*, *A. fragrans*, *A. triquetrum*, *Alyssum orientale*, *Anemone apennina*, *A. hortensis*, *A. fulgens*, *A. japonica* alba, *A. narcissiflora*, *A. ranunculoides*, *Anthericum liliiflorum*, *A. liliago*, *Anthyllis montana*, *Aquilegia chrysantha*, *A. vulgaris* alba, *Arabis alba*, *A. blepharophylla*, *Armeria cephalotes*, *Aronicum glaciale*, *Asphodelus luteus*, *Aster coccineus*,

*A. Amellus majus*, *A. rigidus*, *A. grandiflorus*, *A. tenuifolius*, *A. longifolius* forandus, *Astragalus vaginatus*, *Aubrietia deltoidea aurea*, *A. deltoidea grandiflora*, *Betonica grandiflora*, *Borago laxifolia*, *Botryanthus paradoxus*, *Balboodium verum*, *Calochortus luteus oculatus*, *C. venustus*, *C. elegans*, *Caltha palustris* flore-pleno, *Campanula aggregata*, *C. Hendersoni*, *C. isophylla* and var. *alba*, *C. alba macrantha*, *C. ranunculoides*, *Cardamine pratensis* flore-pleno, *Chelidonium grandiflorum*, *Colchicum autumnale* flore-pleno and var. *album* flore-pleno, *Convallaria majalis* and var. *rosea*, plena, *C. Polygoum*, *Coreopsis auriculata*, *Corydalis lutea*, *C. cava albiflora*, *C. eximia*, *Crocus speciosus*, *C. Sieberii*, *C. sativus*, *Cyclamen hederifolium* and var. *album*, *Cynoglossum apenninum*, *Delphinium alpestricum*, *D. Barlowi*, *D. belladonna*, *D. magnificum*, *Dianthus floribundus*, *D. gracile*, *D. fragrans*, *D. neglectus*, *Dictamnus Fraxinella* and var. *albus*, *Dielytra spectabilis*, *Doronicum Clusii*, *Dodecatheon integrifolium*, *D. Meadia* and var. *album*, *Epilobium latifolium*, *Epimedium pinnatum elegans*, *Erythronium americanum*, *E. Denaisii* and var. *album* and roseum, *E. giganteum grandiflorum*, *Fraxinea appendiculata*, *Fritillaria meleagris* and var. *alba* and plena, *F. pudica*, *Fuchsias* corallina, *F. Roccioni*, *Funkia undulata* fol. aurea var., *F. undulata* fol. argentea variegata, *Gentiana acaulis*, *Geranum Endressii*, *Geum ocellatum* flore-pleno, *Hedysarum obscurum*, *Helianthus multiflorus* plenus, *Helleborus niger maximus*, *H. orientalis*, *H. atro-rubens*, *H. colchicus*, *Hemerocallis flava*, *H. Kwanso* variegata, *Hepatica angulosa*, *H. triloba* var., *Heperis matronalis* plena, *Hymenocallis candida*, *H. amethystinus*, *Hypericum calycinum*, *Iberis corifolia*, *Inula glandulosa*, *Iris acuta*, *I. germanica* var., *I. reticulata* var., *Jasione glutinosa*, *Lathyrus grandiflorus*, *Leucoum verum*, *Lilium auratum*, *L. candidum*, *L. chalcedonicum*, *L. superbum*, *L. tigrinum* splendens, *Lobelia fulgens*, *L. syphilitica*, *Lupinus nutkensis*, *Lychnis Flos-Jovis*, *L. diurnus* flore-pleno, *Meconopsis cambrica*, *Mimulus* var., *Mycotis distitiflora*, *Narcissus Ajax*, *N. poeticus* plenus, *N. incomparabilis*, *Nepeta Mussini*, *Oenothera fruticosa*, *O. macrocarpa*, *Orobanch verus*, *Paeonia albiflora* var., *P. officinalis* var., *Papaver bracteatum*, *P. nudicaule*, *Pentstemon gentianoides* var., *Phlox verna*, *Polygonum Brunonis*, *Potentilla splendens*, *Primula acuta* var., *P. cortusoides*, *P. denticulata*, *P. japonica*, *Pulmonaria aurea*, *Ranunculus amplexicaulis*, *Salvia pratensis* lupinoides, *Saxifraga Burseriana*, *S. granulata* flore-pleno, *S. longifolia*, *Schizostylis coccinea*, *Scilla amona*, *S. bifolia*, *S. alberta*, *Sedum atro-purpureum*, *S. spectabile*, *Senecio pulcher*, *Silene alpestris*, *Sisyrinchium alpestris*, *S. grandiflorum*, *Solidago virgaurea*, *S. cambica*, *Spiraea japonica*, *S. Filipendula* plena, *S. palmata*, *S. venusta*, *Statice Gmelini*, *S. latifolia*, *S. incana* hybrida, *Stenactis speciosa*, *Thalictrum aquilegifolium*, *Trichonema Bulbocodium*, *Trixactis hirta*, *Tritoma media*, *T. Uvaria* and grandiflorum, *Trollius europaeus*, *T. napellifolius*, *T. japonicus* flore-pleno, *Verbesum nigrum*, *Veronica amethystina*, *V. prostrata*, *Vinca scutellaria*, *Viola lutea* grandiflora, *V. cucullata*, *Yucca glaucescens*, *Y. recurva*, *Zauschneria californica*, *Armeria setacea*, *Delphinium tricoorne*, *Lamium longiflorum*, *Lithospermum tinctorum*, *Hypericum olympicum*.

**HOUSE FOR STRAWBERRIES** (*A Subscriber*).—If the house is staged entirely for Strawberries, and it is, as it ought to be, a light house, the stage may be 3 feet from the glass; the plants then receive all the light they require, and room is afforded for watering them and gathering the fruit. In Lord Lonsborough's garden at Norbiton the Strawberry stages are more than 3 feet from the glass, and in few places are better crops produced. When shelves are suspended they may be from 18 inches to 3 feet from the glass, as is convenient. The time for placing the plants in the house depends entirely on the time at which ripe fruit is required. From January to March is the usual time for securing a succession of good crops.

**GRAPES WITHERING** (*A Constant Reader*).—It is impossible for anyone to state the cause of your Grapes withering without knowing in what condition they are. They may have simply shrivelled, or they may have shrank, so without seeing berries we cannot answer your question. Primulas damp off when placed in a cold damp house, and when they are watered injudiciously. If the plants are placed on a shelf in a well-ventilated house, having a night temperature of about 45°, and are watered carefully, not wetting the stems or foliage, the damping will be arrested. The name of the plant, a leaf and flowers of which you have sent, is *Hoya carnea*.

**VINE ROOTS UNHEALTHY** (*G. Povey*).—Having recently been engaged in a close examination and investigation of the phylloxera in the south of Europe we are perfectly acquainted with its symptoms, and are able to assure you that the roots sent contain no trace of the pest. The roots are injured by canker, caused either by want of drainage or unsuitable soil. So far as we can judge by the soil particles adhering to the roots we suspect that vegetable matter unduly preponderates in the compost, and that the border is deficient in mineral matter.

**LIQUID MANURE FOR GREENHOUSE PLANTS** (*H. T.*).—Perfectly clear soot water would be an excellent stimulant for the plants you name, and is not offensive. If you suspend in a rough bag about half a peck of soot in about 30 gallons of water for a few days, and then place in the water a few lumps of lime, you will shortly have soot water as clear as sherry. At this strength the soot water may be applied diluted with half its volume of pure water. A pinch of superphosphate of lime sprinkled on the surface of the pots once or twice a week and watered in would also be a suitable application. Prentice Brothers' fertiliser—"Flor Vita"—sold by florists, is not only not offensive but is slightly perfumed, and might answer your purpose.

**PIPPING REQUIRED FOR HEATING GREENHOUSES** (*Attentive Reader*).—To secure a temperature of 50° in all weathers the extent of 4-inch pipping per 1000 cubic feet of air will require to be 80 feet, but much depends upon the extent of the glass surface. A good formula for finding the length of 4-inch pipping to heat a structure to any given temperature is to "multiply the glass or exposed superficies in feet by eleven times the intended difference between the outside (32°) and inside (in your case 50°) temperatures, and divide the product by fifteen times the intended difference between the heat of the water (180°) and the air of the house."

**PLANT** (*Idem*).—According to your description it is *Viburnum Opulus*, the wild Gaeader Rose, the berries of which are not poisonous. It is propagated by seeds, which take two years to germinate, by layers, and by cuttings of the ripe wood in autumn inserted in sandy soil in a shady border.

**NAMES OF FRUITS** (*Connaught Subscriber*).—The single Apple is Dutch Codlin. We are sorry we cannot name the others. (*C. E. Fenton*).—The Apple is London Pippin; the Plum is Coe's Golden Drop. Your seedling Apple not being ripe we cannot form an opinion upon it. (—).—2, Ord's Apple; 3, Dumelow's Seedling; 5, Ribston Pippin; 6, London Pippin; 7, Court of Wick; 8, Royal Russet. Large Pear Van Mons Leon Leclerc,

brown Pear Beurre de Caplainmont. (C. H.).—Pear, Vicar of Winkfield; Apple, Aromatic Russet. (Eim).—The Plum is Washington.

NAME OF PLANTS (J. Emsdell).—*Ampelopsis japonica*. (J. Wilson).—The flower is *Valeriana officinalis alba*, and the plant may be increased either by cuttings or division of the roots, the latter being preferable. (H. W.).—1, *Anemone japonica*; 2, *Sidalcea oregana*; 3, *Lysimachia vulgaris*; 4, *Centauria montana*. (Winchester).—*Cerintho major*, the Great Honeywort. (Eim).—1, *Begonia insignis*; 2, *Resembles B. Ingramii*; 3, *B. Dregii*.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### BREAKING-UP INFERIOR GRASS LANDS.

THE breaking-up and improvement of pasture land is probably of greater importance to the home farmer in the management of park and grass lands than to the occupiers of farms in general, because of the park and ornamental pastures belonging to the estates of noblemen and gentlemen, in which cases the question of uniformity in appearance of the turf is of the greatest consequence, and where possible it should always be regarded as one of the first objects to be obtained and maintained in home farm and grass land management. It must, however, be understood that an even turf cannot easily be obtained where the mixed soils prevail, for we often find in one range of pastures not only a variety of surface soils, but of subsoils likewise. Now, these variations must naturally influence the growth of the grasses, not only as to quantity of produce, but also in the quality of the herbage. It is frequently found in various districts in parks and pastures that the land is composed of sand, clay, gravel, or peat and their combinations; it is therefore almost impossible that these variations of soil should afford an even turf under the most intelligent management and liberal outlay for manures &c., without breaking up. Upon some soils the coarse haddock grasses, rushes, and other weed-like herbage is indigenous to them, and, however we may attempt to rid the pastures of these objectionable and unsightly weeds, it is often out of question to raise such pastures or parts of pastures into a state to harmonise with the portions which may be naturally good and producing grasses of the best kind. We have often seen it attempted, by manuring and otherwise, to improve some of these worthless pastures; indeed, we have in several cases done this upon our farm without the desired effect, especially in cases when the land required draining, chalking, marling, &c. For although we have given full directions for the improvement of pasture and park lands without breaking up—both as to manuring and compost dressing by the application of earthy matters, &c.—in this Journal (in articles dated January the 24th, 31st, 1878, at pages 75 and 95), yet the treatment there recommended will not be entirely successful under certain circumstances and certain conditions of soil. It will on this occasion be our endeavour to explain these by alluding to such plans and methods of proceeding as have proved successful as experiments carried out by intelligent men, and also by ourselves. In order to direct the attention of the home farmer to these matters in detail we shall give various illustrations, not only of success, but of failures also, so that by contrast we may arrive at conclusions which may be safely relied on.

Our first illustration refers to a meadow which, although we had successfully drained it 3 and 4 feet deep, yet as the soil was in some parts a strong stony clay and the herbage very coarse, including also various pernicious weeds, and the pasture having shown but very little improvement after liberal manuring, chalking, &c., we determined upon breaking it up, and on account of its situation converting it into arable land for future cultivation and the growth of various farm crops. In doing this we committed our first mistake in breaking up pastures, and as it proved a caution to us ever afterwards we must ask our readers to consider carefully the details of the question. This comparatively worthless pasture, or meadow as it may be termed, for the most part consisted of clay, but there were portions of peat, gravel, and sand, so that it may with truth be called a patchy or mixed soil. This was one of the chief reasons why it did not yield to

treatment of a general character, as the margins of the different soils were not sufficiently defined for separate treatment whilst the land was in turf. To commence cultivation we ploughed the land very deeply in the month of December, probably from 7 to 8 inches, involving heavy labour for four horses attached to the plough. The sward being extremely tough the furrows did not turn over readily or so uniformly as we could wish; we therefore employed a man to follow the plough and adjust the furrows where they did not lie properly, in order that when the land was worked down the harrows, roller, &c., may have full effect. The land having laid exposed to the alternations of winter weather was in good condition for tillage in the spring, and by giving it a considerable number of druggings, harrowings, &c., the surface became fine with plenty of loose mould to receive the seed. The crop we intended to grow was Black Tartarian oats; these were drilled about the 14th of March with 4 bushels of seed per acre, which must be considered an ample quantity for ensuring a full plant as far as seed is concerned, particularly as the land was in good order and the seed well buried. We calculated that the old turf from being ploughed under a deep furrow early in the winter would by the seed time, or at least during the growth of the oats, become sufficiently decayed to furnish an abundant supply of humus manure and other plant food to produce a fine crop both of straw and grain, and so it would have done had we not committed this our first mistake, by ignoring the power of the enemies to the crop, which we certainly ought to have estimated and not defied them. The consequence was that soon after the oats came up, which they did with great regularity, numerous enemies attacked the young oat plants, such as wireworms, grubs, slugs, &c., and the plant at harvest was not half thick enough, for although the straw was very strong and coarse yet the yield of grain proved to be only about three-quarters per acre—that is, less than half a crop for such land. The oats being so thin also allowed the weeds to flourish and become very strong, so that we were obliged after harvest to fallow the land and clean it in the autumn, and plough the land deeply to lie during the succeeding winter. In the spring after a great deal of labour by cross-ploughing and druggings, rollings, &c., we managed to reduce the old turf into a condition for burning, which we did, and planted the land with potatoes. No doubt by burning the old sward we destroyed many of the enemies, for the potato crop was good without any manure having been applied. This crop was followed by wheat, 2 cwt. of guano per acre being sown broadcast with the seed; the crop of wheat proved satisfactory, and the field ever since has been as productive as the nature of the soil will admit. We consider, however, that the rotation was injudicious, because when the turf is not burned before the first ploughing after a fallow the first crop should be potatoes.

This was our first mistake, which induced us to adopt a different plan; and our second illustration of breaking up pasture was carried out in the adjoining meadow which had been properly drained. It consisted of mixed or rather different soils in patches similar to the field we have just described, and in order to avoid mistakes such as we had previously committed we had the land "burn-baked" as it is locally termed—that is, pared and the turf turned. This was done by a set of men who undertake to breast plough and cut up the turf, and burn it, for so much per acre; and these men are certainly from great and continual practice in the work very clever, and burn the turf with great judgment, the process being called *stille burning*, the object of which is to produce black ashes, approaching in substance and value to that of charcoal. Instead of burning the turf into red or white ashes by excessive heat and the turf laid on perfectly dry, it is laid on somewhat damp, in order that it may not burn too quickly, but become charred rather than burned, and in doing this great care and attention is required to prevent any part of the heap from burning through to the outside for any red or white ashes to be visible. The turf having been burned in this way gave an immense quantity of valuable ashes, and enabled us to plough and press the land after spreading about two-thirds of the ashes, one-third being removed and used as manure for root crops. This proved sufficient to produce a fine crop of oats, succeeded by other crops equally good, in consequence of the enemies to vegetation having been destroyed by the action of fire in charring the turf. The advantage obtained in this instance was the mixing of soils in the act of tillage, also bringing into operation the chalk which had been previously applied whilst the land was in pasture, and which had sunk into the soil and become inoperative after a certain time. This field is to this day capital arable land, and has borne a succession of valuable crops both of corn and roots, and for a number of years required but very little assistance by manure, it being maiden earth; and in pursuing the subject we shall give further illustrations important to the home farmer.

(To be continued.)

#### WORK ON THE HOME FARM.

*Harvest Labour.*—The time for sowing wheat has now arrived, and on the hill districts of the western and northern counties has been going on for some time; yet, on account of the lateness of

the harvest, much of the horse labour will be still employed in sowing seeds of the fodder crops, such as vetches, rye, trifolium, &c., to the delay of wheat sowing. We notice that very little autumn tillage has been done this year, even in those early districts and dry soils where the harvest has been finished at the earliest period. Digging potatoes, also, ought at this time to be well forward; but the land in general is more covered with weeds than after a dry kind summer, the horse labour will therefore be heavier, and the working of the potato-lifting plough not so easy as in ordinary seasons. The land will also require much more harrowing, &c., to separate the crop from the weeds and clods, and the odd horse or horses will have a proportionate heavy work in carting away the accumulations of rubbish after the potato tubers have been taken to the store or placed in pits. We must observe also that there will be less fear of the potato tubers decaying in the heap or store when they have remained in the land until this late period, because the diseased tubers will have decayed and become mixed with the soil, after which we have found they prove good manure for future crops, especially for cereals. We must call attention now to the sowing of wheat, for we find that the new grain will not vegetate in some instances, and is in many instances so thin and light that many of the samples will be found unfit for furnishing a strong healthy plant. However good condition the land may be in at seed time, yet the plants whilst young have to depend upon the mother corn, and when the grain is not matured the infant plants will be weak and the more easily become a prey for the wireworm, slugs, &c., and also less able to withstand the effect of the early frost or heavy rains of winter. When the land is ploughed and pressed out of clover lea for wheat we prefer sowing after the presser, as the seed is buried a good depth in the land and not so likely to be lifted out by frost. There was a special instance of this last winter, for where the wheat was sown after the presser broadcast it proved in every instance a more regular plant in the spring than drilled wheat, because the lea ground is sure to shrink more or less by the action of frost unless it has been very early ploughed, say in July or August, thus giving time for the land to settle down firm. As the new wheat this year of our own growth is not so well fitted for seed, in some cases not more than 50 per cent. vegetating, we recommend that some samples of old wheat should be sown instead, or otherwise some of the prime samples which we see imported from America may be grown with a surety of a good plant, because, being so well grown and also well harvested, the corn is sure to vegetate with regularity. At the same time we think that the change of soil and climate will favour the growth in England, particularly if care is used to select the best samples of both red and white varieties, the red varieties for strong land and white for dry friable soils.

**Hand Labour.**—The men, women, and boys should now be employed in picking up and sorting the potato tubers as fast as they are raised by the potato plough, and this work will now be diminished and simplified in consequence of the diseased tubers having decayed; the storing and pitting may therefore proceed without hindrance. The crop of mangolds should now be lifted, and as fast as they are taken up and the tops twisted off by hand—we do not like cutting them off—they should be carted to heap or storehouse the same day, because if left out at night even in slight frosts they are sure to receive more or less injury. The leaves should be ploughed in as soon as there is room for the ploughs to work, and when covered up in the soil in the green state they prove a capital manure for cereal crops. Analysis shows that they contain a large amount of potash, and we prefer ploughing-in to feeding-off by sheep, as they are not very healthy food for sheep, even if they have a change of other food with hay in addition. The leaves, too, will be of use by spreading some over any crops, such as trifolium, rye, winter vetches, or young wheat which may be suffering injury by the depredation of slugs, for the slugs are sure to take shelter under the leaves, when they may be picked off and carried away daily. In stocking with cattle do not buy poor animals, but take those which may be just beneath the butchers' quality, and put them into the boxes for fattening, giving them not more than 60 lbs. of roots, 4 lbs. of cake, and 2 lbs. of meal daily, with sweet straw *ad libitum* or cut into chaff; but where straw is plentiful we prefer giving it long in racks, and the portion not eaten serves to litter the boxes or pens. Sheep now on turnips will require either a full allowance of the best hay or else a liberal allowance of bean or barley meal. No doubt, as the hay has been badly made this year, the damaged grain both of barley or wheat will answer better as food for the stock than to be sold at a low price. In stocking-in with sheep, as root food in many instances is short, it may be best to buy lambs to come out for sale as tegs by shearing time instead of ewes to produce lambs, as they require so much food in the spring.

### THE POULTRY CLUB.

A COMMITTEE meeting of the Poultry Club was held at the Agricultural Hall during the Dairy Show. Present—The Hon. and Rev. F. G. Dutton (President), T. O. Burnell, A. Darby, S. Matthews, Rev. J. D. Peake, Rev. H. R. Peel, and O. E. Cresswell

(Hon. Sec.) There were elected members—Mr. B. R. Fowler, Aylesbury, and Mr. H. Jenkins, Mountain Ash, South Wales.

A complaint of Mr. P. Ogilvie was considered, that he had never been able to obtain a medal which he won at the Dairy Show in 1877. The Secretary was instructed to write to the person believed to be responsible for its payment.

The following letter addressed to the Secretary of the late Winchester Show, and forwarded by him, was read to the Meeting:—  
"St. Day, Cornwall.

"SIR,—I don't mind entering a Game Bantam pullet and subscribing £1 1s. towards the Show if you can guarantee me the first prize in that class. I think she would stand a good chance for the first. Of course it would not be known by me that I subscribed in that way and taking the first. If you will agree to my offer please answer as soon as you can, and I will send on the form of entry. And you deduct the guinea entrance fee and 7d. for the catalogue, and you send the rest to me after the close of the Show, which will partly pay for the carriage, and hoping that I shall make a large number of entries at your next Show.

"I am, yours truly,  
"F. M. CORFIELD."

A complaint made about a Cochin shown trimmed at the Glossop Dale Show was laid before the Committee, and it was decided that the matter should be inquired into.

The question of Mr. Chatworthy's Cochin hen disqualified at the Ross Show was considered, and the Secretary was requested to make further inquiries about the matter.

The Secretary was also requested to write to Messrs. Chadwick, and ask if they have any explanation of the state of their drake's wing for which they were disqualified at Hemel Hempstead.

The next Committee meeting was fixed for Thursday, 23rd inst., at Oxford.

### NOTES ON POULTRY AT THE DAIRY SHOW.

THROUGH last week the gallery of the Agricultural Hall was filled with the exhibition of poultry and Pigeons in connection with the Dairy Show. The light was good, and certainly the place is an admirable one for the purpose. The poultry on the whole was by no means what it has been in other years; still, considering the extraordinary season we have just passed through, there were a few very remarkable birds, though beyond them in most classes came a poor lot. Criticism on birds shown has of late been carried to an absurd point of minuteness. We do not therefore purpose to give descriptions of every prize bird, which probably has been described before, and before the season is over will often be described again, but simply to reproduce the notes which we made on the best birds in the classes.

**Dorkings.**—The first and second coloured cockerels were very remarkable. We took much time to make up our minds which we liked best, and hardly came to a conclusion in the end. First was good in colour and feet, an enormous bird, which will look even larger when his neck hackle has fully grown, and with a perfect comb; second, deep-breasted and a noble Dorking, the Hemel Hempstead cup bird; his only fault is a slight curve in toes, from the early cold doubtless. The first-prize bird found a purchaser at £42. The first-prize dark pullet will make a fine hen. We are glad to see prizes given to birds of her more moderately dark colour; the very dark brown hens, in favour of late, produce cockerels too black; second a nice short-legged bird. The class for pairs of any other variety had nineteen entries, but few pens were worth looking at. The first Silver-Greys were by far the best, though we failed to see a good Silver-Grey pullet in the class. The second Whites were fair. *Cochins* were an extremely poor lot; few of them merit notices. Some Partridge entered in the Buff class received prizes, a most unfair thing in our opinion. The birds were muddled up together in an extraordinary fashion. The cup went to a pretty pair of lemony Buffs; the cockerel's wings not good in colour. Some of the other winning Buffs we thought simply frightful. The Partridge in their proper class were all ragged and poor. Whites too were very shady.

**Brahmas.**—The first-prize Dark cockerel and the first-prize pullet were both magnificent, quite Mr. Lingwood's old type of birds. The second award in Dark pullets was a mystery to everyone—a poor, small wry-back bird! The cup Light cockerel was a short-legged bird, good in shape, too much hocked. The four prize pullets were all close together and all very fair birds. *Spaniards* were not remarkable: eleven pairs only were entered; the cockerel in the cup pen struck us as the best bird. *Houdans* were moderate. Sixth claws seem now in vogue; we always thought the fifth *de trop*, but if six are to be required we can only say to fanciers, Avoid Houdans! *Crèves* were not generally in good condition. The first-prize birds were certainly ahead in size, but in the general qualifications of a prize pen we preferred the second. *Hamburghs* made three small classes. We liked the first Golden-spangled, their moons might be more evenly distributed. The Pencilled were not good. First Golden, the best in the class, but not an A1 pair. Blacks were much better; the cup pen specially good, and many others beautiful in gloss. *Game* were only fair all round. We dislike the ever-increasing size of winning birds, evidently due



to Malay blood. The pullets were in better condition than the cockerels. *Malays* were pretty good in both classes—viz., for cockerel and pullet, the winning bird stood easily ahead. *Polish*.—The first and second pen, both Silver, particularly good. *Andalusians and Minorcas*.—A large class and good. First and third were nice Black Minorcas, and second good Andalusians; the cockerel particularly fine. *Leghorns*.—The winners of first honours in both classes well deserved them. The cup Whites a healthy and well-shown pen, but we should certainly like to see their lobes less yellow. *Any Variety class*.—First good Silkies. Deprived of their classes Silkies seem successfully to have asserted themselves of late in the variety class. *Bantams*.—Game Bantams have made a great descent from what they were a few years ago. In form it is true they are more gamey, but their colour is very poor, and their legs seldom match. This was the case with the first-prize pair of Black Reds. *Any other Variety*.—First Silver-laced; fairly marked birds, and better for size than we have seen of late. Second beautifully shown, White-bodied.

*Ducks* made good classes. They were confined to birds of the year, and certainly some of them seem marvelous when it is remembered that they have never seen a New Year's-day. Possibly the Judges thought some had, otherwise the awards did not always strike us as being felicitous. The first-prize Pekins were a magnificent pair, and claimed at £6 10s. We also much admired the drake in the third-prize pen of Pekins. The Show seemed well managed, and the fine weather enabled visitors to see the birds well late into the afternoon, and the obnoxious gas was not as on some former occasions flaring in their faces.

## POULTRY.

**DORKINGS.**—Coloured.—Cockerel.—Cup, H. Lingwood. 2, J. A. & M. F. Smith. 3, A. E. W. Darby. 4, H. H. Young. Pullet.—1, J. Taylor. 2, J. A. & M. F. Smith. 3, and Rev. H. R. Peel. 4, J. C. Brown. *Any other variety.*—Chickens.—Cup, P. E. Plummer. 2, Miss E. Williams. 3, Miss Pasley. 4, Miss Peel. *Any variety.*—1, B. Smith. 2, J. E. Pilgrim. 3, Miss Pasley. 4, Miss Peel. *Cinnamon or Buff.*—Chickens.—Cup, G. H. Wood. 2, A. J. Swindell. 3, C. Sidgwick. 4, H. Lingwood. *Partridge.*—Chickens.—1 and 2, C. Brown. 2, Dr. J. Maerke. 3, R. J. Wood. *Any other variety.*—Chickens.—Cup, H. Tomlinson. 2, A. E. W. Darby. 3, G. B. C. Breese. 4, C. & E. Naylor. *Any variety.*—Cup, A. E. W. Darby. 2, C. Sidgwick. 3, T. F. Ansdell. **BRAHMAS.**—Dark.—Cockerel.—Cup, H. Lingwood. 2 add 3, Miss A. Shuter. 4, Mrs. J. Turner. 5, Rev. E. C. Pritchard. Pullet.—Cup, H. Lingwood. 2, R. P. Percival. 3, Newnham & Manby. 4, Miss H. Clerk. 5, H. Lingwood. *Light.*—Cockerel.—Cup, G. H. Wood. 2, G. R. Breese. 3, G. Dowker. 4, A. Ives. 5, H. K. Wiggins. *Any other variety.*—Pullet.—1 and 3, G. H. Wood. 2, P. Haines. 4, C. & E. Naylor. *Light or Dark.*—1, E. Kendrick. 2, W. T. Padwick. 3, G. B. C. Breese. **SPANISH.**—Chickens.—Cup, J. F. Dixon. 2, W. R. Bull. **HOUDANS.**—Chickens.—Cup, Mrs. D. Lane. 2, J. P. Fattinson. 3, E. J. Winfield. 4, S. W. Thomas. 5, Rev. A. B. Skipworth. **CREVE-CEURS.**—Chickens.—Cup, J. Ward. 2, Chadwick Bros. 3, A. Ogden. 4, A. Ward. **HAMBURG.**—Cockerel.—Cup, G. H. Wood. 2, G. R. Breese. 1 and 3, H. Fiske. 2, J. Urquhart. *Golden or Silver-pencilled.*—Chickens.—1, H. Beldon. 2, A. Perry. 3, G. Kilby. *Black.*—Chickens.—1, J. W. Kelleway. 2, J. Pickup. 3, S. Webster Tinker. **GAME.**—Black Red.—Cockerel.—Cup, J. Voisin. 2, W. J. Pope. 3, J. R. Pratt. 4, W. T. Garne. Pullet.—Cup, J. Voisin. 2, J. A. & H. H. Staveley. 3, T. P. Lyon. 4, W. Tyler. 5, Hon. & Rev. F. Dutton. *Brown Red.*—Cockerel.—1, J. Braithwaite. 2, Leant. 3, J. Feukens. 4, F. Warde. Pullet.—1, J. Voisin. 2, W. A. F. Fenwick. 3, J. Braithwaite. 4, W. Tyler. *Any other variety.*—1, J. A. & H. H. Staveley. 2, G. R. Breese. 3, W. Bocksey. *Any other variety.*—1, J. Colgrave. 2, J. Goodwin. 3, J. Fell. 4, R. Walker. **MALAY.**—Cockerel.—Cup, T. Docwra. 2, Rev. H. J. Fairlie. 3, Mrs. Stanley. **POLISH.**—Chickens.—1 and 2, G. C. Adkins. 3 and Rev. H. Jarvis. **ANDALUSIANS AND MINORCAS.**—Chickens.—1, J. Harwood. 2, M. A. Wilson. 3, R. A. Boissier. 4, R. E. Roscoria. **LEGHORNS.**—Brown.—Chickens.—Cup, R. Richardson. 2, J. F. Jenks. 3, E. Gibbs. *White.*—Chickens.—Cup, R. Richardson. 2, E. Gibbs. 3, Mrs. Trougham. **ANY OTHER VARIETY.**—Chickens.—1, Rev. E. S. Woodgate. 2, A. Dunlap. 3, W. Nicholson. **DORKINGS, BRAHMAS, AND COCHINS.**—Cock or Cockerel.—1, Rev. G. S. Davis. 2, S. Luke. 3, Sir A. K. Macdonald. Bart. 4, Rev. E. H. Morgan. A. E. W. Darby. A. E. Ward. *Hens or Pullets.*—1, A. Todd. 2, Sir A. K. Macdonald. Bart. 3, W. Wykes. 4, S. Luke. 5, J. Todd. 6, Woodgate & Mills. *Cock and Hen or Chickens.*—1, A. E. W. Darby. 2, Woodgate & Mills. 3, J. Bloodworth. 4, Rev. E. H. Morgan. G. H. Wood. **ANY OTHER VARIETY EXCEPT BANTAMS.**—Cock or Cockerel.—1, C. Herbert. 2, C. Hobson. 3, R. Fowler. 4, C. & E. Naylor. A. Herbert. T. Docwra. W. Bentley. *Hens or Pullets.*—1, W. Fenn. 2, A. Smith. 3, H. M. Bourne. 4, W. Nickolls. L. C. Verrey. E. Burrell. **GAME BANTAMS.**—Black or Brown Red.—1, G. Hall. 2, T. H. A. Stretch. 3, C. D. Jones. 4, E. Morgan. *Chickens.*—1, G. Hall. 2, V. F. Addie. 3, J. Smith. **BANTAMS.**—Black.—1, F. Beandlan. 2, F. P. Phelps. 3, W. D. Osoff. *Any other variety.*—1, Rev. F. Searle. 2, Mrs. Froughton. 3, H. Stephens. 4, G. Viger. **ANY OTHER VARIETY.**—Cock and Hen or Chickens.—1, T. F. Phelps. 2, F. W. Hardwick. 3, W. D. Osoff. **DUCKS.**—Aylesbury.—Cup, R. R. Fowler. 2, T. Sear. 3, J. J. Gunn. 4, D. Sharp. E. Snell. *Rouen.*—1, F. Parlett. 2, J. J. Gunn. 3, T. Wakefield. *Black.*—1, H. M. Maynard. 2, C. & E. Naylor. 3, Mrs. M. A. Hayne. *Pekin.*—1, R. R. Fowler. 2, W. J. Nickolls. 3, A. D. W. Darby. 4, W. Nickolls. 5, E. Shaw. 6, W. Birch. *Any other variety or Ornamental Waterfowl.*—1 and 3, Master H. W. Boucher. 2, Chadwick Bros. **SELLING CLASSES.**—Ducks.—1 and 3, R. R. Fowler. 2, W. Bygott. 4, R. H. Bush. 5, A. E. W. Darby. *Goats.*—1 and 2, J. & W. Birch. 3 and Rev. E. Snell. *Poult.*—1 and 2, W. Wykes. 3, F. Warde.

## PIGEONS.

**POUTERS.**—Cock.—Cup, R. Fulton. 2 and 3, J. Baker. 4, Capt. N. Hill. Cockerel.—Cup and 3, Rev. W. C. Bullen. 2, J. Baker. 4, Rev. W. C. Bullen. J. D. Lang. *Hen.*—Cup and Rev. J. Baker. 2, E. Beckwith. 3, J. D. Lang. *Pullets.*—Cup and 3, E. Beckwith. 2, Rev. W. C. Bullen. **MAGPIES.**—Any colour.—Cock or Hen.—Cup and 3, R. Fulton. 2, J. Baker. **CARRIERS.**—Black or Dun.—Cock.—Cup and 3, R. Fulton. 2, J. Baker. 4, Rev. R. F. Maynard. H. Stephens. E. Walker. *Hen.*—Cup and 3, R. Fulton. 2, E. Walker. 4, J. Brewer. H. Stephens. H. Fulton. S. Walker. H. Stephens. *Any other colour.*—Cock.—Cup, H. M. Maynard. 2 and 3, R. Cant. *Hen.*—Cup, R. Cant. 2 and 3, R. Fulton. *Any colour.*—Young Cock.—Cup, H. Heritage. 2, Rev. R. F. Maynard. 3, J. Dye. *Young Hen.*—Cup, W. G. Flanagan. 2 and 3, H. Stephens. **DRAGONS.**—Any colour.—Cock or Hen.—Cup, 2 and Rev. R. Woods. 3, C. Howard. *Blue or Silver.*—Cock.—Cup, T. C. Burnell. 2, R. Woods. 3, J. Lush. 4, Rev. R. Woods. W. Osmond. *Young Cock.*—Cup and 3, R. Woods. 4, W. G. Flanagan. *Young Hen.*—Cup, T. C. Burnell. 2, R. Woods. 3, R. Woods. *Red or Yellow.*—Cock.—Cup, W. Sargent. 2, R. Woods. 3, A. Leith. 4, H. Masters. *Hen.*—Cup, W. Sargent. 2, R. Woods. 3, A. Leith. *Young Cock.*—Cup and 3, A. Leith. 2, R. Woods. *Young Hen.*—1 and 2, A. Leith. 3, R. Woods. *Any other colour.*—Cock.—Cup and 2, R. Woods. 3, C. Howard.

*Hen.*—Cup and 2, R. Woods. 3, C. Howard. *Young Cock.*—Cup, R. Woods. 2, T. C. Burnell. 3, C. Howard. *Young Hen.*—Cup and 2, R. Woods. 3, E. Mawson. 4, Rev. W. C. Bullen. 5, T. C. Burnell. *Silver.*—Cup and 3, R. Woods. 4, R. Woods. 5, T. C. Burnell. **TOMBLERS.**—Immaculate.—Cock.—Cup, R. Fulton. 2, H. Heritage. 3, E. Beckwith. *Hen.*—Cup and 2, J. Baker. 3, R. Fulton. *Young Single Bird.*—Cup, E. Beckwith. 2, J. M. Braid. 3, E. Mawson. *Any other variety Short-faced.*—Cup, J. Baker. 2, E. Beckwith. 3, M. W. Eaton. *Long-faced, Bald or Beard.*—Cup, R. Woods. 2, P. Wardle. 3, Brown and Hastie. *Long-faced, any other variety.*—Cup, R. Woods. 2, H. E. Yates. 3, J. Baker. **BARBS.**—Black.—Cock.—Cup, E. Walker. 2 and 3, J. Baker. *Hen.*—Cup and Rev. R. Fulton. 2, E. Walker. 3, J. Baker. *Any colour.*—Cock.—Cup, R. Woods. 2, E. Walker. 3, C. Howard. *Hen.*—Cup, J. Baker. 2, R. Fulton. 3, E. Walker. *Any colour.*—Young Cock or Hen.—Cup and 3, J. Baker. 2, S. Walker. **JACOBIANS.**—Red or Yellow.—Cock.—Cup, J. Schweitzer. 2 and Rev. A. G. Shaw. 3, H. Heritage. *Hen.*—Cup, A. G. Shaw. 2, J. Schweitzer. *Any other colour.*—Single Bird.—Cup, A. G. Shaw. 2, H. Heritage. 3, W. H. Roberts. 4, J. Schweitzer. **FANTAILS.**—White.—Single Bird.—Cup, J. Baker. 2 and 3, J. Waters. *Any other colour.*—Cup and 2, J. Waters. 3, Capt. N. Hill. **NUNS.**—Single Bird.—Cup, A. Dutchie. 2, J. Baker. 3, P. Wardle. **TRUMPETERS.**—Single Bird.—Cup and 2, J. Baker. *OWLS.*—Any colour.—Cock or Hen.—Cup, T. S. Stephenson. 2, J. Baker. *English.*—Cock.—Cup, J. Lister. 2, H. W. Weaving. 3, G. Stanfield. *Foreign.*—Single Bird.—Cup, R. Woods. 2, W. Smith. 3, J. Baker. *Young Single Bird.*—Cup, T. H. A. Stretch. 2, E. Mawson. 3, J. Dye. **TURBITS.**—Blue or Silver.—Single Bird.—Cup, R. Fulton. 2, J. Baker. 3, G. Webster. 4, F. Homes. *Any other colour.*—Single Bird.—Cup, G. Webster. 2, C. A. Crafer. 3, O. E. Crafer. *Any colour.*—Young Single Bird.—Cup and 2, J. Dye. 3, G. Webster. 4, J. Baker. **MAGPIES.**—Single Bird.—1, 2, and 3, F. P. Bulley. **RUNTS.**—Single Bird.—1, H. Stephens. 2 and 3, J. S. Price. **ANTWERPS.**—Short-faced.—Cock.—1, C. H. Buckland. 2, H. W. Weaving. 3, C. E. Chavasse. *Hen.*—1, C. G. Butler. 2, H. W. Weaving. 3, J. S. Collier. *Homing, Chequered.*—Cock.—1, G. J. Lenny. 2, F. P. Ellis. 3, Capt. G. Edwards. *Hen.*—Cup, G. Webster. 2, H. W. Weaving. 3, T. H. A. Stretch. *Homing, any other colour.*—Cock.—Cup, W. Stevenson. 2, H. A. Howard. 3, G. P. Pointer. *Hen.*—Cup, J. M. Sellers. 2, W. C. W. Snow. 3, W. Cleave. *Special Flying Class of Homing.*—Cock.—Cup, G. Burgess. 2, J. M. Chambers. 3, A. Bentley. 4, G. J. Lenny. 5, G. Carvill. *Hen.*—Cup, H. A. Howard. 2, W. B. Browne. 3, F. Matthews. 4, G. J. Lenny. 5, W. Young. **ANY OTHER VARIETY.**—Single Bird.—1, J. Waters. 2, O. Neel. 3, F. P. Bulley. **SELLING CLASSES.**—Single Bird.—1, C. Howard. 2, F. C. Cox. 3, R. Woods. *Put.*—1, F. P. Bulley. 2, J. J. Edleston. 3, G. A. Poland.

## RECENT ORNITHOLOGICAL SHOWS.

Two important ornithological shows have been held during the past few days, both of which we had the pleasure of witnessing. The first took place at Burton-upon-Trent, where there were upwards of 1200 entries of Pigeons, Rabbits, Canaries, Mules, and British and Foreign birds exhibited, besides a competition in stuffed specimens. The Show was a good one and fairly managed, excepting that we could not get a glimpse of a catalogue during the whole of the first day, which we looked upon as a great mistake. Setting aside this drawback the Show would have passed off well had it not been for an "unfair transaction," as a contemporary says, which occurred with certain noted exhibitors of Rabbits, who countenanced the lending and changing of certain specimens for the purpose of winning a "special prize of £3 8s.!" The *Chronicle* does not at all scruple in mentioning the names of the culprits, one of whom is a member of the Burton Committee! We have it upon good authority that there will be no more open Rabbit Shows in connection with the Burton Ornithological Society.

Norwich Show is one of those interesting events always looked forward to with pleasure by those moving in the world of Canydom. It counts its seventh annual exhibition of the Norwich Alliance and East Anglican Ornithological Association, and the Show we again had the pleasure of participating in was possessed of as much attraction as any of its predecessors. The number of exhibits reached about 1100, and comprised Canaries of high and low colour, and such a fine collection of Lizards, Crested and Mules, rarely seen at one show. The competition in most classes was very severe. Besides the above British and Foreign birds and stuffed specimens formed imposing features of the Show, and there were likewise something to please entomologists in the way of butterflies, moths, and beetles, of sixty different varieties from the East Indies, in the largest case we ever saw, and which was valued at £105, the owner being awarded a gold medal.

## VARIETIES.

THE Poultry Club offer three prizes of £8, £2, and £1 for the best baskets for the conveyance of poultry to shows, to be competed for at the Crystal Palace Poultry Show.

—We hear that the famous White-crested Polands, also the Jacobins and Pigeons, of the late Mr. Thomas Norwood of Salisbury, are all for sale. The collection of Polands is a splendid one, and a rare chance for a beginner in the breed.

—At Oxford the entries of poultry there are not so good as last year. Those of Pigeons are better—viz., 1200. Of the latter neither the Carrier, Pouter, Turbit, or Jacobin classes are well filled. Antwerps and Magpies are very numerous.

—At the Altrincham Petty Sessions last week, Nathan Marton of Denton near Manchester was fined 6s. and costs for cruelty to a Hamburg cock which he had exhibited at the Altrincham Show. A witness testified that the said Denton man brought the cock to the Show, and just before penning him removed a pin from his comb and a stiff bandage of string.

—THE British Bee-keepers' Association Committee Meeting was held on Wednesday, October 16th. Present—Mr. T. W. Cowan in the chair, Rev. G. Bartrum, Messrs. Abbott, Cheshire, Hooker



Hunter, and the Rev. H. R. Peel, Hon. Sec. The question of the publication of diagrams for lectures again came on for discussion, and a sub-committee was formed to obtain estimates and definite information. The balance in favour of the Association after payment of all claims was, as shown by the monthly audit, £59 12s. Messrs. Cheshire and Hunter reported progress of the "Cottager's Handbook," in preparation. The names of members in arrear with subscription were read. Mr. J. Garratt, Hon. Sec., of the West Kent Bee-keepers' Association, waited upon the Committee desiring the affiliation of his Association with the British. The Committee agreed that the county of Kent might be advantageously worked from two centres, and admitted the West Kent Association to affiliation as a county association. Messrs. Cheshire and Hooker proposed and seconded that the Honorary Secretary be requested to draw up a form of recognition of county associations by the British. The Rev. E. Bartrum brought forward at some length a scheme for obtaining Government recognition of the claims of apiculture in the work of national education. The discussion of this question will be resumed at a future meeting.

— We hear that a three-guinea cup has been given by Mr. W. O. Hodges for Japanese Bantams at the forthcoming Crystal Palace Show. The Committee will provide second and third prizes, and we hope to see a large class of these quaint little birds.

— We continue to hear of poultry, both prize-bred and birds of pure strain for profit, being exported to the New World. We learn that some Game, which have of late been carrying all before them at shows in the United States, came from the yards of Mr. S. Matthews. Some Dorkings from the yards of Mr. O. E. Cresswell have this week been shipped from Liverpool, destined to be the progenitors of improved farmyard stock in the River Plate.

— SUCCESSFUL breeders of fine table poultry, as well as mere fanciers of form and feather, are this year to have their reward at the Crystal Palace Show. It is announced that the proprietors of the *Live Stock Journal* have given two three-guinea cups for the heaviest cockerel and the heaviest pullet, either pure or cross-bred.

— A MEETING has been held at the Agricultural Hall, London, relative to the formation of a British Goat Society. Mr. W. Freeman presided. Mr. H. Holmes Pegler explained that the objects of such a Society would be twofold—namely, to improve the breed of goats, and to encourage goat-keeping generally. The number of goats exhibited at the first dairy show was only twelve, whereas there were now ninety-five shown. The only thing now remaining to be done was to agree upon a certain standard of excellence, and to endeavour to breed up to it, the chief point at which to aim being good milking qualities. He suggested that the new Society should offer prizes at the shows of the Royal Agricultural Society and similar bodies. After some discussion it was unanimously resolved to form an Association, to be called the British Goat Society, Mr. Pegler being appointed Hon. Secretary. The annual subscription was fixed at 6s., and most of those present enrolled their names as members.

## CONVERSAZIONE OF THE BRITISH BEE-KEEPERS' ASSOCIATION.

MR. COWAN'S WINTERING FRAME (Illustrated).

THIS gathering was hardly so numerously attended as the similar previous one, though it cannot by any means be said either to have lacked in interest or spirit. Mr. F. B. Jackson of Shindon being voted to the chair, Mr. Cowan rose to read his paper on "Wintering." Having laid down the general principles upon which successful wintering in the open air depends, Mr. Cowan proceeded to explain that large colonies are necessary, because if the bees be few each is called upon to produce much heat, and in consequence to consume much honey and to pass through excessive labour, and as a result abnormal distension supervenes, often passing into dysentery. He pointed out that the general consumption of stores in a large frame hive from October 1st to 1st of March is 1½ oz. daily, or something less than 18 lbs. of honey; but if bees, upon the supposition that this is enough, be left poor they were in constant unrest and anxiety, always rushing from the hive in the endeavour to make up deficiency, and in this way suffered more in wintering than their better-provided neighbours. Winter passages were important, for if these were omitted bees unable to get round the cold edge of this comb might starve with abundance of stores in the next comb but one to them. To successfully winter, Mr. Cowan added, it is most important that the bees in each hive should be young at the close of the season—i.e., that breeding should be kept up late, and this can be brought about only by stimulative feeding. He explained that he had found in using the quilt that if it were allowed to hang half way down the hive side capillary attraction would draw off the moisture from the top of the hive and keep it in fine condition. He commended hives with double sides as better preservers of heat, and spoke of the good stocks usually made by condemned bees because of their late breeding. In mentioning

the poisonous nature of carbonic acid produced by the breathing of the bees, and the necessity for ventilation, he introduced a frame which he explained had been used in a stock which had passed last winter drier and in better order than any other he possessed.

Of this frame we give an illustration with the spirit of Mr. Cowan's explanation. One of the ordinary comb-frames is fitted up with a small metal pipe, one open extremity of which, A, passes out at the hive mouth. This pipe leads to a flat tin box, B, around which the bees are forced to cluster as the frame is put into the centre of the hive. The heat from the bees warms the box and its contained air, which ascends and passes out into the hive at C and D, the heavier consumed air sinking to the floor. In this way a constant supply of pure air is kept up, and the mouth of the hive may be made so small that only room for a passing bee need be allowed. The tube, E, F, has at its lower end an inverted funnel, while F passes out through the crown board or quilt and materially assists in getting rid of vapour and foul air.

lively discussion was then commenced by Mr. J. Hunter

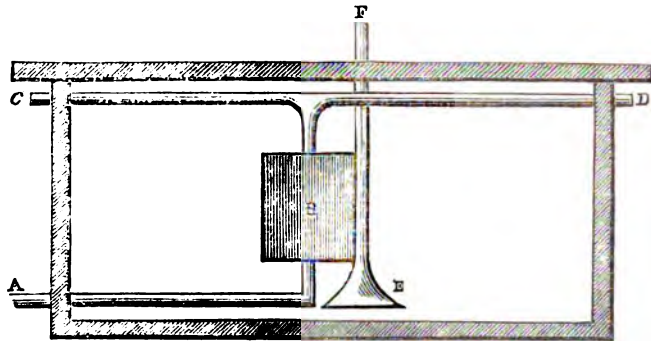


Fig. 36.

making some observations as to the period during which bees abstain from brood-raising.

Mr. Cheshire explained somewhat fully some discoveries he had made with regard to artificial feeding, but as this will be made the subject of an article it is needless to say more respecting it here.

Mr. Glennie pointed out the necessity to screen bees from the sunshine of winter, which often tempts them to fly to their destruction. He placed in front of each hive-mouth a sheet of tin held in place by a common paper clip, and this saved the lives of many bees.

Mr. Abbott drew attention to a plan for protecting bees from draught by having as it were a front parlour to the hive; they living for the time being in the back. Mr. C. Stevens stated that he felt nervous in advancing the statement as a comparatively young bee-keeper; but he believed he had found the means of preventing propolis, and gave some instances in which he had actually placed edges together in hives which the bees had not fastened. Mr. Stevens would do service by showing his examples at some gathering, when the bee pundits will soon settle whether he has really solved the problem. Mr. Lyon questioned whether pollen was essential to the production of brood, but Messrs. Hunter and Cheshire on practical and scientific grounds put the affirmative conclusively.

The animated debate had been long continued when the Rev. H. R. Peel humorously remarked that he, rather as looking after the bee-keepers than the bees, reminded all that it was getting late. A warm vote of thanks to Mr. Cowan for his valuable paper, and to Mr. Jackson for filling the chair, terminated the proceedings.

## PREPARING BEES FOR WINTER.

### METHODS OF FEEDING.

GRIM winter is giving now unmistakable signs of its approach, and no time is to be lost in getting bees into such condition as to enable them to meet all the rigour that may await us without any subsequent attempts at assistance on our part. The prime necessities for the season of repose—and the more complete the repose the better for the stock—are sufficient food, ample protection from cold and damp, and wisely managed ventilation. If these points are all settled as it should be we can hardly fail to bring our bees in admirable order into the spring.

I wish now to say something of methods of feeding, leaving till a future issue the questions of protection and ventilation. The owner of the skep often asks anxiously, How am I to feed my bees? my hives have no holes at top. The answer clearly is, If you desire to feed above by the bottle, and no method is equal to it for the careful bee-keeper, make a hole in the top of your skep, and to accomplish this proceed thus:—With some means of producing smoke—your tobacco pipe if you please, or a roll of old cotton (not linen) rag, or a torch made by twisting up some



corduroy, or best by one of these latter substances smouldering in a Bingham smoker—approach your skep, and commence to cut with a sharp narrow-bladed knife the hole where desired. When you have really penetrated "the honeyed dome" (it may not even be "honeyed" after such a summer) keep the bees in check by puffing at them as required. The hole complete, place over it a previously prepared thin board, not too small—as, though it is to carry a food bottle only now, it may take a super in summer. The board will have had made in its centre an aperture the size of that cut in the straw, and at its corners four holes to take long screws, which if turned into the skep itself will hold with sufficient firmness. If nothing be placed between the board and the hive heated air will constantly flow away, to the immense detriment of the bees. To prevent this, before putting the board in its place lay a ring of tough dough, or, if you object to the dough, kneaded clay, round the hole in the hive, and squeezing the board down upon it an airtight joint is made which will remain intact for years. Having now our feeding stage the most simple method is to fill a pickle bottle with syrup, and tie over its neck a piece of fine canvas or coarse holland. An indiarubber band slipped over the neck will fix more quickly and neatly than tying with string, placing the palm of the hand over the cover, inverting the bottle the hand may be removed without a drop of the sweet liquid escaping, and this now stood upon the hole will be sipped out by the bees, whose long tongues will be thrust up through the pores of the canvas, air entering bubble by bubble as the feeding progresses. But if no care be taken to prevent it stranger bees will gather in a thick roll round the bottle neck on the outside of the hive, and not only will our help in large part go to those for whom it was not intended, but robbing is likely to be started. A flower pot or a pickle jar inverted and placed over the bottle will protect it, but failing such as these a common duster loosely tied in a knot round the neck and pressed against it will keep all uninvited bees at bay.

Having now described primitive methods within the reach of every thrifty cottager—and those that are not thrifty ought not to keep bees, for if they do the bees will do little towards keeping them—let me go on to describe others. It is well known that some years since I drew attention to the advantages of slow continuous feeding, and devised then a rotating stage of vulcanite, which permitted a regulation of the amount of food taken by the bees. This stage has been largely imitated by others, but I am not acquainted with any form equal in simplicity and effectiveness to the original, except a stage and bottle devised by Mr. Green of Rainham. My own has been before the public, and is explained and illustrated in my "Practical Bee-keeping," so that now I shall content myself with describing Mr. Green's arrangement. A wide-necked bottle has a ring of box wood fitted accurately to its neck, and on to this ring is fixed a plate of vulcanite pierced with a number of small holes arranged in a particular pattern. When the bottle is filled with syrup the ring and vulcanite plate are put over its mouth, the box wood gripping it sufficiently to prevent its falling off when the bottle is inverted, the food not running out for reasons all will understand. A second vulcanite plate, also in a ring of box wood, is placed over the bees—i.e., over the feed hole, or over the opening in the quilt. This vulcanite plate is also pierced in a particular pattern, the holes in it being larger than those in the one formerly mentioned. The bottle is stood in position, the two vulcanite plates touching faces. Where the holes lie over one another the bees can pass up their proboscides and drink in the sweets; where they cover one another this is impossible. A series of figures are placed on the edge of one box-wood ring, an index on the edge of the other, the index always standing over the figure corresponding to the number of holes open. We thus at a glance see how rapidly it is possible for our bees to feed. We can increase or decrease the rate in a moment. The wood ring protects absolutely from robbers, and so perfect is it in this respect that even ants find it impossible to get at the sugar. This bottle received a special prize at Plymouth, and is in my opinion the most perfect feeder we yet have.—F. CHESHIRE, *Avenue House, Acton.*

### FOUL BROOD.

I CONSIDER it a mere fancy of your esteemed correspondent, "B. & W.," that foul brood is in any way connected with the importation of the Italian bee. That disease popularly styled "back-gaun brood" was well known in Scottish apiaries long before the Italian bee was heard of; and "B. & W." forgets that the late Mr. Woodbury publicly acknowledged his indebtedness to Bonner's work published last century for enlightenment as to the nature of the malady he had to grapple with in his "dwindling apiary." Private correspondents of the late lamented gentleman are alike aware that foul brood found its way among his stocks solely in and through the combs of an English cottager's skep, and was not in any way connected with his Italian importations. All practical apirians familiar with the case with which foul brood can be induced and the contagion spread must thank "B. & W." for his timely warning to the uninitiated to be aware of stranger bees and combs.—W. J.

### OUR LETTER BOX.

**RABBITS' HAIR CLOTTED (E. P. N.).**—Wash out the clots with soap and water, then keep the rabbits in a warm outhouse until they are thoroughly dry.

**CANARY IN A SLOW MOULT (Lisette).**—Under the most favourable circumstances the moulting sickness is very trying to Canaries; but especially to those passing through a slow moult, such as yours appear to be, the sickness is worse, particularly at this period of the year. The bird falling off its song is not to be wondered at. Most likely it will break into song when the sickness has abated. A slow moult has a tendency to bring about irritation—thus one cause of the bird pecking itself. Are you quite sure the bird's cage is free from parasites? A flight for a few weeks in a spare room or spacious cage away from the heat of the fire, with a daily cold bath, fresh green food, salt to peck at, and plenty of sand to dust in, will do wonders in restoring the bird's health and appearance. Before you again place the Canary in its cage let the cage be cleansed, and examine well the crevices to see if there are any insects about.

**FOUL BROOD IN ABERDEEN AND BANFFSHIRE (J. S., Cairnrie).**—We are sorry to inform you that the comb sent is really foul-broody, and especially sorry to hear that many hives appear affected in the same manner. We can only commend to you the instructions already given, which we hope may assist you to a cure.

**UNITING BEES (J. W. Lanford).**—In uniting swarms it is wise to use some strategic measures before the bees are cast together. Bees do not like strangers, and naturally treat them as enemies, naturally kill all intruders, and hold their own territory inviolate. This is well known, and also the fact that bees know each other and strangers by smell. Hence it is necessary in uniting swarms to put by some means the defenders off their guard, or take their city by surprise. Probably you took no precautions in your unsuccessful effort to unite two swarms. Feeding well and sprinkling both swarms with good minted syrup an hour before the union is attempted is an excellent way. Good feeding fills the defenders with joy and good nature, and makes the bees to be surrendered more acceptable to them. Another successful mode of uniting bees is to drive both swarms into separate empty hives and let them remain for an hour or two, then cast them together amongst the combs of the hive to be kept for stock. Thus both swarms are put to a disadvantage and feel as trespassers do, and act as if they had nothing to defend or care for but their own personal safety. Good feeding with scented syrup is important. The value of an extra swarm to a stock is so great that every precaution should be used to effect a happy union.

**FOOD FOR BEES (A Subscriber).**—You must lose no time in feeding your bees, and you must feed liberally if you wish to save them. Barley-sugar is not only too expensive, but bees do not take it down fast enough at this time of year. We have found good moist sugar at 2d. or 3d. per lb. an excellent food made into a not too thick syrup by stirring till dissolved in boiling water. One pound of sugar to one pint will give about the suitable thickness for this time of year. Some persons boil the water, which we find unnecessary. Feed till your stocks have increased ten pounds in weight each.

**VARIOUS (A Constant Reader).**—1. It is not good to let supers with comb in them remain over the stocks unless you close the communications, otherwise the combs get mouldy from the damp arising from the perspiration, &c., of the bees below. 2. The bees full of comb out of which your bees have died will do again if you can keep them in a dry place during winter shut off from dust and wax-moth. We should cut away any very old comb or any that contained dead bees; if the hives are fresh and clean next spring they will do to put swarms into. 3. New bees nevertheless are better than old ones. 4. Continue feeding your bees in mild weather till you have brought the weight up to 25 lbs. each, or till you feel satisfied that each stock has at least 10 lbs. of food to begin the winter with. Weigh them again in the spring, and if you find the hives greatly reduced in weight when March comes begin then to feed again, or earlier if necessary. It is difficult to say when to stop. We are always guided by the weather and the condition of the hives at the time.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 52' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.						Rain.
1879. Oct.	Barom. at 33" and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		In sun.	On grass.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass.				
We. 15	30.109	deg. 42.5	deg. 49.5	N.	deg. 50.0	deg. 57.7	deg. 57.3	deg. 97.3	deg. 84.1	—	In.		
Th. 16	30.225	41.7	53.3	N.	48.0	50.3	54.0	93.3	82.9	—	—		
Fri. 17	29.593	49.3	46.3	W.	46.9	57.6	54.7	81.5	79.0	—	—		
Sat. 18	29.505	45.7	41.8	N.W.	47.3	53.1	49.1	96.2	85.6	0.009	—		
Sun. 19	29.649	55.4	58.4	S.W.	48.3	61.0	45.5	73.1	87.2	0.050	—		
Mo. 20	29.509	49.3	46.0	W.	50.0	61.0	47.8	98.2	84.7	—	—		
Tu. 21	29.553	44.5	42.7	W.	48.7	51.6	38.5	90.9	82.2	—	—		
Means.	30.000	46.8	44.1		48.5	56.0	50.0	90.1	84.5	0.410			

### REMARKS.

- 15th.—Bright, fresh, rather windy day; starlight night.  
16th.—Frost on grass. Clear bright day; starlight night.  
17th.—Frost on grass. Fair day and rather warmer; overcast at intervals with threatening for rain, gusty wind; starlight night.  
18th.—Very bright fresh day, little misty after 4.30 P.M.; slight rain 8.30 P.M.  
19th.—Warm damp morning, windy, a gleam of sunshine at intervals; slight rain after noon; heavy shower 5.30 P.M.; fine and starlight after 7.30 P.M.  
20th.—Fine bright morning, gusty wind, and shower at 1.15 P.M.; bright fine afternoon; clear evening, starlight.  
21st.—Clear bright morning, rather overcast at times, but generally fine day.

Barometric pressure and temperature except the maximum in sun considerably lower than last week.—G. J. SYMONS.

## WEEKLY CALENDAR.

Day of Month	Day of Week	OCT. 30—NOV. 5, 1879.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.							
30	TH		54.9	38.5	46.6	6 52	4 36	4 16	7 26	0	16 13	303
31	F		54.0	39.0	46.0	6 53	4 34	4 44	8 34	16	16 16	304
1	S		54.8	37.9	46.8	6 55	4 32	5 19	9 38	17	16 18	305
2	SUN	21 SUNDAY AFTER TRINITY.	54.4	37.3	44.7	6 57	4 30	6 5	10 36	18	16 19	306
3	M		53.5	35.9	44.5	6 59	4 29	7 0	11 24	19	16 20	307
4	TU		52.1	36.6	45.0	7 0	4 27	8 4	0 3	20	16 19	308
5	W	Sale of Bulbs at Stevens's Rooms.	52.9	37.2	46.1	7 2	4 26	9 15	0 34	21	16 18	309

From observations taken near London during forty-three years, the average day temperature of the week is 53.7°; and its night temperature 37.5°.

## THE CULTIVATION OF THE GRAPE VINE.

[Read before the Sheffield Gardeners' Association by Mr. ABBOTT.]

**G**RAPES justly rank high among dessert fruits, and are always greatly appreciated both by the healthy and the invalid. In most cases I would impress upon intending cultivators the importance of preparing a good border, as a few pounds judiciously spent on that work will give good results and satisfaction in after years. For the staple soil I recommend the first 3 inches, or 6 if the soil is very good, from the top of an old pasture. The turf may be used as soon as cut, but I prefer it stacked up for a few weeks. If used fresh it is liable to heat if there is much grass on it, and then often becomes much too close afterwards; it is, therefore, a wise precaution to stack it and to turn it over once, when the other materials necessary for the border can be added. One bushel of inch bones should be mixed with every two loads of soil, also add plenty of lime rubbish from old buildings, and oyster shells. Exclude all woody matter, as it is liable to produce fungus. The oyster shells should be broken or calcined, and are then very valuable. Some horse droppings or decayed cow manure may be employed; yet the border must not be made rich, as manure can always be employed in the form of top-dressings to maintain the vigour of the Vines. The bottom of the border should be concreted and well drained. This is an important matter and should not be neglected, as the Vine requires much water, and the soil must at the same time always be in a sweet healthy state. Concrete, however, will not be necessary in all cases, for some situations are suitable without it. Place a foot depth of rubble on the concrete, with drain pipes at intervals across the border, having a sharp fall into a drain at the front, and protect the drainage with a layer of turf, grass side downwards, then fill in with the compost. The border should not be less than 2 feet deep and from 10 to 20 feet wide.

The Vines should be planted 4 feet apart when they have commenced growing naturally in the spring without firing. Choose Vines with well-ripened wood, turn them out of the pots, and spread the roots out their full length, not leaving them in a ball; then cover them with about 6 inches of the best compost, mixing with it some ground or dissolved bones, pressing the soil, which should be moderately dry, rather firmly, then water with a fine rose. Do not prune the Vines at planting time, but allow them to break and then rub the buds off to the part where you want new canes to commence. Allow the young growth to advance until there is plenty of foliage, when the old can be removed without fear of bleeding. Afford no fire heat until the autumn, and let the Vines grow to the top of the house without stopping the leaders. Encourage all side shoots, and allow them also to grow without stopping until the house is quite full of foliage without crowding. Do not allow any fruit the first year, or it will seriously weaken the Vines and endanger their future prosperity. They should be trained to wires 18 inches from the glass, which distance I find quite near enough. Syringe in the afternoon

on fine days, and close as early as the situation of the house will allow. Employ fire heat to ripen the wood in the autumn if necessary, giving plenty of air both day and night; I find that one load of fuel then gives better results than two would do in the spring. After all the leaves have fallen prune without delay, and cut the Vines down to within 3 feet of the bottom if they are strong; the second year they may bear one or two bunches if only to prove the varieties, but do not overcrop, as a little indulgence when the Vines are young will be amply repaid in the future. Shorten the canes each year, leaving 3 or 4 feet of new wood, so that rods 18 or 20 feet long would take about six years to establish. I advocate and adopt the system of short-spur pruning—that is, cutting all side shoots on the main stem back to one eye, as it is neat in appearance and the flow of sap regular; but if I found when pruning that the wood was not satisfactory (it should cut like a piece of Oak), I should leave two eyes and rub off the extra one in spring, so as to have a double chance of fruit. The spurs or side shoots should not be less than from 2 to 3 feet apart. I prefer the latter distance, more particularly for Muscats, or any white Grapes; but instead of rubbing off all the buds between the spurs allow a few to remain and pinch them to two or three leaves; by this means the main stem will be nearly clothed with foliage from the base to the top, which will greatly assist the equal swelling of the main stem.

The leading shoot I always allow to grow every year to the top of the house and down the back wall before stopping. The side shoots I usually stop the second leaf beyond the fruit; but if there is room they may produce five or six before stopping. The sub-laterals I stop at the first leaf, and if it can be done without crowding another leaf or two may be allowed, as with plenty of good and clean foliage well exposed to the light you will have healthy root-action, which is necessary for the proper finishing of the fruit. The house being now full of foliage, stop every lateral as soon as it shows itself. By this time the Vines will be in bloom and will require a high and rather dry temperature of 75° to 80° by day. Allow the temperature to rise to 90°, or even 95°, with sun and plenty of air. Shake the Vines when in bloom by gently tapping them with the hand to disperse the pollen. I also generally use a rabbit's tail fixed on a stick and lightly stroke the bunches with it, which carries the pollen very well and assists to impregnate the blossoms. This is very necessary with many varieties, particularly Muscats. After the Grapes are set commence thinning them as soon as possible; to do this well requires practice, but a bunch to look well on the table should be firm enough to retain the shape it had when hanging on the Vine. Do not handle the berries, or the effects will be seen afterwards in the form of rust, and will spoil their appearance. At this stage do not syringe the Vines until the bunches are thinned and thoroughly cleaned from dead flowers, or the water will stain the berries. I usually syringe the Vines once a day, except when in flower or the weather is dull, until the fruit commences colouring, closing the house early to obtain all the sun heat possible with safety. At night when the fires are made up the top

ventilators are left open about an inch. After the fruit has commenced colouring syringing must cease, and the house should never be entirely closed again neither front nor top, always allowing as much air as possible when the temperature can be maintained at 80° to 85° by day and 65° to 70° by night. Some gardeners never syringe after the fruit is set, but I am obliged to do so to prevent red spider; but if plenty of moisture can be maintained by evaporation and damping without syringing to keep the Vines clean and healthy it must be a decided advantage to the finish of the fruit.

After the fruit is set give good soakings of tepid liquid manure not too strong, every two or three weeks until the fruit commences to colour. I usually employ the drainings from a liquid manure tank belonging to the stables and cowhouse, but sometimes I use fresh horse droppings put into tubs and scalded, applying it at a temperature of 80° or 85°; both the liquid and the manure are spread evenly on the surface of the inside border. I find this one of the safest of manures; but it is best to give the Vines a change. I have used Amies' chemical manure with good results.

When the Vines are pruned all loose bark is removed by rubbing with the hand only; the rods are then washed with warm water and soft soap, and are painted with a mixture of Gishurst compound, soot, lime, and clay, with a little sizing to make the paint adhere to the stems. The top soil and old manure are then taken off down to the roots, and a top-dressing of fresh loam mixed with old hotbed manure, burnt ashes, and dissolved bones is given. The Vines are then laid horizontally on the front of the house, and remain there until they commence growing in the spring. The outside borders, after they have received a good soaking of rain in the autumn, are covered with portable glass frames, which remain on until the end of May or first week in June. Roots in outside borders have the advantage of the summer and autumn rains, and I always find more roots close to the surface of those borders than I do inside the house. A covering of long litter about a foot in depth is useful for the border when glass or shutters are not provided. To do justice to a Vine border it should never be dug nor cropped, but should have the full influence of the sun.

If old Vines are unfruitful or not satisfactory take all the old soil off down to the roots and raise them; cut a slight notch in the old roots at distances of 12 or 15 inches apart, which will cause new roots to issue from the parts cut, then cover with fresh soil, the same as recommended for the borders. Nothing suits Vines better than new soil. When the Vines commence growing, instead of keeping the old rods rub all growths off to the bottom and take up a young cane to the top of the house. If the roof is lengthy it is best to take two canes; commencing the other half way up, let the old rods hang down, and rub all growths off as soon as they appear, they will keep growing, but rub the shoots off and let the sap flow into the young canes, which will soon grow to the top of the house. When the house is full of foliage cut the old stems away by a little every day until they are cut clean off, they will not bleed if care is used not to cut them off too soon. Attend, then, to the proper ripening of the wood, and the Vines should fruit well the following season.

The varieties I recommend for general cultivation where plenty of fire heat can be employed are Black Hamburg, Muscat of Alexandria, Madresfield Court, a great favourite of mine, good in all respects; Bowood Muscat, Black Lady Downe's and Black Alicante: plant plenty of these, and you will have Grapes that will give satisfaction. For amateurs, where little or no fire is used, Black Hamburg, Foster's White Seedling, and Royal Ascot, a good Grape that will ripen and colour well in a cool house, are suitable.

#### AUTUMN FLOWERS.

THIS autumn we have had the only fine weather that we have been favoured with this year. October has been a dry month, but Roses have not done much in the way of producing second blooms. It is true I have not a large collection, but those I have are for the most part now flowerless. Baronne de Rothschild is with me the best for flowering in autumn, and La France comes next. The Teas this year have not as yet bloomed at all. Marie Van Houtte used to flower most profusely late in the autumn, but I have not seen a bloom this year since July.

The Gladioli have been exceedingly fine. I have only French varieties, but a great amateur florist who called here said he had never seen finer spikes. Among the crimsons and scarlets

Meteor is a very fine variety; while Maréchal Vaillant is a very bright scarlet blotched with white, a truly grand flower. Among the lighter shades of red and rose Sir Joseph Paxton, Ninon d'Ecos, Molière, and Madame de Sevigné are all good. Perhaps one of the best of the purples is the one dedicated to the illustrious Italian musician Cherubini, while Dr. Lindley and Le Dante are both fine; Mozart is also worthy of its great name. Among the whites we find the finest spikes; the petals are larger, the flowers finer, and the effect most delightful. I do not know of a pure self-white, but Canova and Norma are both very good. The yellows at present are weak—in fact I do not know of a really good yellow; perhaps a warm buff is nearer the colour of most varieties than yellow. The best I have are Canary and Sulphureus.

I have now a fine collection of herbaceous Asters, or Michaelmas Daisies, blooming in the churchyard. These are excellent decorative flowers, far superior, in my opinion, to the majority of Chrysanthemums. They are very vigorous-growing plants, requiring plenty of room. Among the best are cabulicus, beautiful light blue; grandiflorus, purple; laxis, bright lavender; alpinus albus, lavender-blue. The herbaceous Phloxes are now exceedingly fine. There are hundreds of varieties of these splendid flowers, and it is difficult to select any without doing injustice to others; but The Bride, La Perle, Atalanta, Dame Blanche are charming white varieties; and J. K. Lord, salmon red; Baron Duraffe, rich purplish-crimson; Gloire de Porteau, a rosy lilac, are all good here.

Perhaps the gayest time of all here this year has been September and October. The Gladioli, Phloxes, and Asters are so gay and present such bold masses of colour that the garden may be seen bright with flowers from a long distance. Chrysanthemums are not yet in full bloom, but the stalks are full of buds, and these, to me most melancholy flowers, will soon carry on the succession and give us a few ragged flowers as long as the frost will allow them to bloom. The trees here are (October 21st) only just beginning to change colour, and pheasant shooting has not even been attempted. There is a great amount of food for stock in our fields, and everything looks as if we should have a long and fine autumn down west.

—WYLD SAVAGE.

#### THE ROSE ELECTION.

##### GARDEN VARIETIES.

AT least with this portion of my rosy task I anticipated but a small amount of difficulty. I fondly imagined that I should find that even if the men were numerous the opinions would be comparatively unanimous. Alas! alas! as I write these lines, with only a portion of the voting papers returned, I have nevertheless already tabulated over two hundred different Roses, and still I may add, in the words of the old song, "They come, they come!"

What points, it may be asked by some, are necessary for a garden Rose to be considered A1? There are, it seems to me, two great essentials—vigour of constitution and abundance of bloom, and if this abundance of bloom can be spread over a duration of time so much the more is the value of the variety enhanced. Some of the summer Roses make up, it appears to me, by their profusion of flowers for the complete absence of bloom in the later months; but I think the result proves that but few of the other voters agree with me, or the position of the summer Roses would be higher; yet few, I apprehend, can have seen a plant of Charles Lawson, for instance, covering some 8 or 9 feet square of a wall, the luxuriant foliage interspersed with a hundred blooms, each vying with its fellows, without exclaiming at the glory of the sight, and allowing that numbers certainly made some amends for the short-lived pleasure.

I cannot say whether this peculiar season—which, whatever may be its faults, has at least allowed us to see some of the blooms of our favourites in great beauty—has altered the character of some of our Roses, but I never recollect seeing a bloom out on a Hybrid Bourbon Rose late in September before. But two or three days ago in September I found in my garden a stray bloom on a plant of Madame Barney.

A few of the electors appear to me by their replies to have considered that the question referred rather to the best garden flowers among the more "exhibition" Roses; indeed, one person declined to vote because he should only be giving the names of best-blooming exhibition varieties. I think the qualities necessary in a garden Rose are very different; and though on starting this "garden election" I felt convinced

that not a few of those that figured amongst the highest seventy would also be returned as amongst the most valuable garden flowers, yet at the same time I felt equally certain that the shifting of position would be considerable, and that some unplaced would on this test find their way into the charmed circle. I can well understand a person selecting thirty garden Roses choosing some amongst the number for beauty of form, although in the general number masses of bloom, with little consideration for beauty of outline, would probably guide our selection. With many persons variety in the character of the Rose would also have a certain weight; to such persons an attentive consideration of Mr. Cranston's list will be valuable, and for the same purpose Messrs. Ewing's list will repay attention. These two lists may be usefully published in a future number. But the table will speak for itself, and it may satisfy the curiosity of some of our readers. The two classes of voters have been kept distinct, and the headings of the columns are the same as those of last week (page 322).

No.	Name of Rose.	Cha- racter.	Age.	Raiser.	Ama- teurs.		Nurse- rymen.		Grand Total.	
					A	B	C	A+B+C		
1	La France	H.P.	1868	Guillot fils.	21	1	1	23	10 0 1 11	34
2	Gloire de Dijon	T.	1853	Jacotot	20	0	1	21	8 0 2 10	31
3	John Hopper	H.P.	1862	Ward	9	24	4	31	2 4 2 8	29
4	Duke of Edinburgh	H.P.	1868	W. Paul & Son	7	5	4	16	6 3 1 10	26
5	Jules Margottin	H.P.	1863	Margottin	6	8	4	18	2 2 2 6	24
6	Souv. de la Malmaison	B.	1843	Beluze	4	4	5	15	6 2 0 8	23
7	Byrnie de Rothschild	H.P.	1867	Pernet	10	5	2	17	2 2 0 5	22
8	Cheshunt Hybrid	H.T.	1873	G. Paul & Son	7	6	3	16	3 2 0 6	22
9	Général Jacqueminot	H.P.	1863	Roussel	7	3	2	12	4 2 3 9	21
10	Dupuy Jamin	H.P.	1868	Jamin	6	5	1	12	2 6 1 9	21
11	Sémateur Vaise	H.P.	1859	Guillot, père	6	4	6	16	1 2 1 5	21
12	Alfred Colomb	H.P.	1865	Lacharme	8	4	1	13	4 0 1 5	18
13	Marq. de Castellane	H.P.	1869	Pernet	8	1	4	13	2 2 0 5	18
14	Madame V. Verdier	H.P.	1868	E. Verdier	9	11	0	13	3 1 1 5	18
15	Marie Baumann	H.P.	1868	Baumann	9	2	1	12	2 2 0 5	17
16	Charles Lefebvre	H.P.	1861	Lacharme	10	0	6	16	1 0 0 1	17
17	Boule de Nègre	H.P.	1867	Lacharme	0	4	7	11	3 1 1 5	16
18	Ferdinand de Lesseps	H.P.	1869	E. Verdier	1	5	1	2	2 0 0	7
19	Maurice Bernardin	H.P.	1861		0	1	1	10	1 0 0 5	15
20	Exposition de Brle	H.P.	1865	Granger	0	0	1	0	0 2 0	3
21	Prince C. de Rohan	H.P.	1868	E. Verdier	2	2	5	9	1 2 2 6	15
22	Fisher Holmes	H.P.	1865	E. Verdier	1	5	4	10	0 4 1 5	15
23	Eugénie Verdier	H.P.	1869	Guillot fils.	0	0	3	3	0 1 0 5	15
24	Marie Finger	H.P.	1873	Lacharme	0	0	4	1	1 1 2 5	15
25	Céline Forestier	N.	1868	André Leroy	8	2	1	11	2 0 1 2	14
26	Beauty of Waltham	H.P.	1862	W. Paul	2	3	4	9	1 2 2 5	14
27	Marie Van Houtte	T.	1871	Ducher	4	2	0	6	3 3 0 6	13
28	Abel Grand	H.P.	1865	Damaizin	2	4	3	9	1 2 0 3	12
29	Maréchal Niel	N.	1864	Pradel, E. Verdier	10	0	0	10	1 0 0 1	11
30	Anna Alexieff	H.P.			1	2	5	8	0 1 2 3	11
31	Marie Rely	H.P.	1865	Fontaine	0	2	7	9	1 0 1 2	11
32	Dr. Andry	H.P.	1864	E. Verdier	2	4	2	8	1 1 0 2	10
33	Souvenir d'un Ami	T.	1846	B. Defongère	3	3	3	9	0 0 1 1	10
34	Devoniensis	T.	1838	Forster	1	6	1	8	1 1 0 2	10
35	Mrs. Rosanquet	G.	1832	Laffay	3	1	2	6	1 1 1 3	9
36	Baronne de Maynard	H.P.	1864	Lacharme	4	1	2	7	0 1 1 2	9
37	Houère	T.	1859	Robert	2	1	2	5	2 0 2 4	9
38	Captaine Christy	H.P.	1873	Lacharme	3	5	1	9	0 0 0 0	9
39	Paul Neyron	H.P.	1869	Levet	3	1	5	7	0 1 1 2	9
40	Mad. de Cambacères	H.P.	1864	Fontaine	1	3	1	5	2 1 4	9
41	Prin. M. of Cambridge	H.P.	1866	Paul & Son	1	3	1	5	1 2 1 4	9
42	Madame Faloot	T.	1858	Guillot fils.	2	2	0	4	1 2 0 4	8
43	Comtesse de Serenye	H.P.	1875	Lacharme	3	2	2	7	1 0 0 1	8
44	Madame Bernard	T.	1873	Levet	2	2	2	7	0 0 1 1	8
45	François Michelon	H.P.	1871	Levet	1	4	1	6	0 2 0 2	8
46	Coupe d'Hébé	H.B.		Laffay	1	3	2	7	0 0 1 1	8
47	Mad. C. Joigneux	H.P.	1861	Liabaud (?)	0	2	5	6	0 1 2 3	8
48	Victor Verdier	H.P.	1869	Lacharme	0	2	5	6	0 2 1 3	8
49	Antio Wood	H.P.	1866	Verdier	3	0	0	3	1 0 2 3	7
50	Aimée Vibert	N.	1828	Vibert	2	1	4	3	0 1 2 3	7
51	Common Moss	N.			1	0	4	5	1 1 0 2	7
52	Mons. E. Y. Teas	H.P.	1875	E. Verdier	1	2	0	3	0 2 1 4	7
53	Margt. de St. Amand	H.P.	1864	Sansal	0	2	2	4	1 1 1 3	7
54	Comtesse d'Oxford	H.P.	1870	Guillot père	0	1	1	6	0 0 1 1	7
55	Louis Van Houtte	H.P.	1869	Lacharme	3	2	0	5	0 0 1 1	6
56	Etienné Levet	H.P.	1873	Levet	3	0	2	6	0 0 0 0	6
57	Camille Bernardin	H.P.	1865	Gautreau	2	2	1	5	0 1 0 1	6
58	Belle Lyonnaise	T.	1870	Levet	1	2	0	3	1 1 1 3	6
59	Duc de Wellington	H.P.	1864	Granger	2	1	1	4	0 1 1 2	6

Thirteen other Roses obtained five votes, twenty were mentioned four times, twenty-six three times, two votes were given to thirty-six other candidates, and, to complete the list, eighty-one obtained honourable mention only once out of 235 Roses named altogether.

The first return I received from a well-known contributor to our columns ("A. C."), and he said he anxiously expected the poll, and fully anticipated a large number of solitary mentions. His prophecy is correct. I confess not to have expected anything approaching the number of Roses to have been named. Now, I venture to say that had I asked the electors to name

the Rose that would head the poll they would not have named La France, which is at the head of the list by a very large majority. Some years since in reply to my question (name the best Rose in cultivation for all purposes) the verdict was unhesitatingly in favour of Gloire de Dijon, and the next on the list was Maréchal Niel. I believe the reply would be the same still. How, then, arises the position? From examining the returns I am forced to conclude that some of the electors considered Teas inadmissible; at any rate, no tea aroma can be detected in their selection. I felt, however, it was not my duty to put leading questions as to the Roses, as the question certainly included all Roses.

The extraordinary way in which the two premier Roses stand out is most curious, as the lowest of these has thirty first-class votes; Duke of Edinburgh, the third highest in these votes, can only muster thirteen. There are in all thirty-seven electors (twenty-five amateurs and twelve nurserymen—nearly two to one), but the leading Rose was omitted altogether by three electors, and Gloire de Dijon by six! Further, one would suppose that the twentieth Rose on the list would have polled at least half the highest possible, but, on the contrary, it falls far short; indeed, the rapid diminution of the grand total is something very extraordinary. Maréchal Niel, it will be noticed, has but eleven votes, but then they are all first-class. Capitaine Christy, though having nine votes, has not a single nurseryman to say a good word for him.

Altogether I personally feel that this "garden" election is not a success as to our having arrived at the thirty best garden Roses. Perhaps I have no right to say this. I certainly shall not take the wind out of "WYLD SAVAGE'S" sails, and say that it is "a mockery, delusion, and snare;" but I believe that another year we should better understand what we are aiming at. Surely we need in garden Roses variety of form and colour, and the specimens we would like in our gardens need not be all giants, yet until we arrive at forty-seven we do not see a Rose named that is always small. So again No. 43, Coupe d'Hébé, the highest of the summer Roses, with a grand total of eight votes out of thirty-seven, shows how very differently we look at the value of that class of Rose for garden purposes.—JOSEPH HINTON, *Warminster*.

P.S.—I am indebted to Mr. Thomas Laxton for the following alterations and additions to the poll list on page 322, which makes it almost complete:—No. 14, Mdle. Marie Finger, raised by Rambaux and sent out by Lacharme. No. 28, Constantin Fretakoff, 1877; raiser, Jamin. No. 46, Madame G. Luizet, 1877; Liabaud. No. 48, Madame Welsh, raised by Veuve Ducher. This Rose I have seen in some of the lists classed as an English Rose. No. 53, Souvenir de Madame Pernet, 1877 (?), raised by Pernet. No. 55, Empress of India, 1874, raised by Mr. Thomas Laxton; and No. 49, Duchess of Bedford, was raised by Mr. R. B. Postans.—J. H.

### THE TOMATO DISEASE.

FOR the last three or four years the cultivation of the Tomato in this neighbourhood in the open air has become an impossibility. As soon as the fruit begins to colour, and sometimes before, the haulm, and then the fruit, is attacked by a disease which seems to be almost identical to that from which its cousin german the Potato suffers; and during my visit to Fontainebleau I discovered that the same disease had attacked the Tomato there. Knowing how largely it is used in France and how very much more popular it is becoming amongst ourselves, moreover how wholesome it is, it seems a great pity that this hindrance to its cultivation should have arisen. I am afraid that, like the Potato disease, there is no prevention and also no cure. We may discover resting spores, but unless we can devise some plan of destroying them I do not see that practically the discovery is of much use.—D., *Deal*.

FUCHSIA RICCARONI AT BOURNEMOUTH.—Seeing in the *Journal of Horticulture*, October 9th, page 289, some account of the extraordinary growth and luxuriance of Fuchsias in the Isle of Wight, and knowing that my Fuchsia Riccartoni plants on each side the drive to my house are the admiration and surprise of all who visit me, I last week had my largest measured. The diameter was from north to south 11 feet 6 inches, from east to west 13 feet 2 inches at 6 feet from the ground, and the height 10 feet 6 inches. Last year these figures would have been higher, but the intense frost of the past winter caught some of the top and outside branches and obliged me to cut quite 1 foot from the height, the sides also were cut back.

Had all these plants been left to Nature I could not venture to say what size they might have been by this. I have been obliged to cut all my *Fuchsia Riccartoni* back very much, as they had trespassed upon the drive, and space wanted for other shrubs, but in their trimmed and shortened state I am glad to report them in testimony of the fine climate we enjoy here. —A. M. C., *Bournemouth*.

### FRUIT CROPS IN ESKDALE.

*Grapes*.—Our Vine borders are annually top-dressed with good compost. At the time of doing this last winter I added a good quantity of lime, alightly forking it in with the other ingredients, and the result this year has been very satisfactory; for notwithstanding the heavy rains and sunless weather all through the growing season, Black Hamburgs never coloured better. Duke of Buccleuch is still in my estimation a fine Grape and should be in every collection. I have it grafted on the Muscat. Venn's Muscat is a very productive good-flavoured Grape, and succeeds the Black Hamburg very well if grown in the same house. Madresfield Court has done exceedingly well with me, and as I have recommended it in your pages before I beg to do so again, confirming all I have said in its favour. We have only one Vine of it, which has been fruited heavily every season since the second year it was planted. The average length of the berries with us are  $1\frac{1}{2}$  inch, and several of these exceed  $1\frac{1}{2}$  inch in length. It is certainly a noble Grape, and has a very pleasant flavour. With many growers it is subject to crack; to prevent this I recommend keeping it well supplied with water and occasional doses of liquid manure until colouring commences, when water may be withheld and a drier atmosphere maintained. Such is my treatment of this Grape, and which I find to answer admirably.

*Peaches and Nectarines*.—Of these we have had magnificent crops, and have gathered about 1400 fine fruits from the trees in the house. Dagmar, Royal George, and Noblesse Peaches have done best. The first-named was planted three years ago, and has proved a very productive fine-flavoured Peach; it carried a good crop last year, and this season it carried 120 splendid fruits. I recommend this variety to anyone who is contemplating planting. Duc de Tello (Dutilly's), Violette Hâtive, Pitmaston Orange, and Elruge Nectarines have done best with me. The three first are the best that I have tried both as to fruiting and other qualities. We annually top-dress our Peach border with some good rich compost immediately after pruning and washing the houses, never allowing the borders to become cracked or dry during the whole season; indeed, I generally give the border a good soaking of liquid manure after the crops are gathered.

Apples trees on walls are bearing a better crop with us than they have for the last two years. Pears are in a fair quantity on some trees, but very small, and many of them I fear will be worthless. Raspberries have been over an average crop, and have made fine strong canes. We have adopted wire trellises for supports, and find them a great improvement; we also mulch the beds freely with short grass throughout the summer. I may add that the Raspberries have been grown on the same ground for seventeen years, and are yielding as fine crops as ever. Black Currants and Gooseberries have been abundant; we only gathered the last of them about a fortnight ago. Red Currants have also been plentiful; we have still a few hanging on the bushes.

Strawberry plants have fruited well, indeed we have not had such a fine crop for some years. Those planted last autumn have done best, excelling the old-established plants both as to quantity and quality. The varieties grown are Sir Joseph Paxton, Garibaldi, James Veitch, President, Duke of Edinburgh, Duc de Malakoff, and Comte de Paris.—JAMES DICKSON, *Arkleton*.

### GARDEN VERMIN.

*Slugs*.—The best remedy against slugs are ducks. Brewers' grains are a farce. Turn in the ducks early; keep them in during the daytime, and let them out in the evenings.

*Scale*.—The best remedy is methylated spirit laid on with a brush. It is the late Mr. Rivers' receipt.

*Red Spider and Mildew*.—Place some naphtha in water, and either syringe, or, what is better, sponge the trees. Last year my fruit trees under glass were badly attacked by red spider and mildew. As the winter was wet I set my men to sponge

the trees; consequently this year I have not seen a red spider, nor has there been any mildew. I had the house painted in winter.

*Snails*.—These in winter congregate and may be killed easily. They get in large numbers under Ivy or any other shelter. During a frost is the time to catch them.—W. F. RADCLIFFE.

### CLIMBERS.

FROM the climbers round my own house there is a constant succession of bloom. On the south side an immense *Magnolia grandiflora* is this year loaded with bloom. The flowers open well too, and their delicious fragrance fills the house. They do not last long nor travel well, though some of mine go to friends in Scotland in the weekly hamper which makes a small return for the grouse which are sent down from time to time. Next to the *Magnolia* is a very fine yellow *Jasmine* (*Jasminum revolutum*), which has beautiful foliage and pretty yellow flowers, but they drop too easily, and their scent is what is commonly called "faint," and by no means pleasing. Beneath the *Jasmine* a sturdy old *Myrtle* grew for many a year; it is now dead, but in spring a fine *Everlasting Pea* grows up, which is speedily covered with flowers, and then almost as speedily swept away altogether. Close to this is a fine young plant of *Chimonanthus fragrans*, which is doing well, and if the shoots ripen sufficiently may flower in the winter. *Clematis Vesta* grows by its side. I gave three times as much for it as for Miss Bateman, and I do not believe there is any real difference. If anything Miss Bateman has the advantage. A strong plant of *Jasminum nudiflorum* comes next—an invaluable climber; its long sprays covered with golden flowers at Christmas are most precious. By the side of this and amongst it grows *Clematis Jackmanni*. The dark purple flowers are certainly rich and velvety, but the recommendation to use it as a bedder seems to me a mistake. The flowers are late in coming, and do not last in perfection long. It ought not to be placed where the flowers are expected to make a show the whole season. A large space of wall is covered by the beautiful Trumpet Flower, *Bignonia radicans*. This plant is not nearly so common as it ought to be. The large bunches of long trumpet-shaped flowers, coming at the end of August, are a great addition to the wall garden. Nothing attracts so much attention, and few people seem to know it. It is cut-in quite close every autumn, and the flowers come at the end of the long summer shoots. It has the habit of what the poor people call "rasseling," so that offshoots may be found coming up in most unexpected places at a great distance from the parent, hence the name *radicans*. I recommend anyone who has a south wall for climbers to obtain *Bignonia radicans*, and they will enjoy it while the quantity of blossoms which they will have from it in the autumn months.

Underneath this *Bignonia* and sheltered by it is a Climbing *Devoniensis*, sweetest of Roses, with a perfume which nothing else can equal. It does not grow strong as it would in the milder climate of the county from which it takes its name, but it always flowers, and lately it has shown a disposition to improve. On the same wall *Maréchal Niel* does splendidly, but it appears to me to be a Rose which soon exhausts itself by flowering. I do not think I shall ever again have from it the hundreds of blooms which once adorned its great thorny branches. *Clematis montana*, allowed to take its own way to a great extent, hangs about in graceful festoons.

For those who like scented flowers few plants are better than the *Stauntonia latifolia*, the perfume of which is very strong. It is, perhaps, rather delicate, but it will grow, I believe, on any south wall. There is a curious old church at Ringmore, near the sea on the south coast of Devon, on the south wall of which there was, and probably there still is, a fine plant of *Solanum crispum*. The flower is very like the Potato, showing their natural affinity. It produces an extraordinary quantity of blossoms, and is certainly a very great ornament to the church when it is in flower. It is a plant not often met with, but one easily managed after it has once made a start. In that picturesque churchyard at Ringmore, amongst gigantic *Fuchsias* and many other flowering plants and shrubs, with the wide expanse of blue sea, and the cottages of the village nestled in the valley below, this *Solanum* seemed quite at home.

There is something about *Cotoneaster* which I could never like. Just as *Aucuba* is associated with the town area steps descending to the kitchen, so *Cotoneaster* is associated with dusty roads. It always looks as if it had been suffering from



a recent shower of March dust. The berries are dull, the flowers inconspicuous; the whole plant looks like one of those things which have to struggle for life. It is not much cared for, no one gives it a thought; nevertheless there it is with its tough, wiry, leafy sprays climbing about and doing well. Passion-flowers might be much more common than they are, and it is a great pity that such an interesting flower should not be more cultivated. *P. cærulea* is almost hardy, though such a winter as last certainly did it much injury. It has rather an untidy appearance unless kept strictly in order. The fruit is curious, and some years very abundant. It grows in quantities on a row of houses on the outskirts of the south side of Dublin, called Pembroke Road. I remember many years ago that those houses were covered with the fruit of the *Passiflora cærulea*, and presented a striking appearance on that account.

If the comparatively new Virginian Creeper, *Ampelopsis Veitchii*, only grew a little faster it would be an invaluable climber for places where no nail can be driven. It clings and sticks fast to anything. I hope in time to get it to cover a new iron church which is simply hideous in its naked deformity, but clothed with this *Ampelopsis* might look quite pretty.—A GLOUCESTERSHIRE PARSON.

### WELLINGTONIA GIGANTEA.

ON page 306 Mr. Muir inquires if it is usual for this tree to produce clusters of two dozen or more cones. It is very common with many trees here, and particularly near the tops, but some of the branches lower down have only six or seven in a cluster. The cones appear very persistent, remaining on the trees a few years before dropping off; but all attempts with me as yet to produce young plants from the seed, which is not unlike that of Parsnips, have proved futile. Some have been sown in a hotbed, some in a stove, and some under a handlight at the base of a north wall. One seed in the last sowing germinated and the plant grew about one-eighth of an inch above ground, but died in a few days after. Some seed that I have taken within this last month from a healthy tree about 48 feet high I have sown in a cool greenhouse for trial. If any of your numerous correspondents have been fortunate enough to raise plants from English-saved seed it would be worth recording.

A few of what appeared to be the highest trees were measured a few days ago; the tallest was 53 feet in height, girth at base 10 feet 8 inches. This tree lost its leader some years ago, or no doubt it would have been a few feet higher. However, another was produced, which appears vigorous, having grown 18 inches since this time last year. Another tree, 51 feet 6 inches high, has a girth at base of 9 feet 6 inches; but the tree here with the largest girth, 11 feet 6 inches at base, is only about 30 feet in height, although raised from the same batch of seedlings as the two above mentioned. They are growing in a loamy soil about 3 feet deep, with a stony or gravelly subsoil, but I have seen them thrive well on a clayey subsoil that is well drained; planting them in a poor shallow soil I believe is useless.

There can be no question but that this tree will eventually make a fine landscape tree. It contrasts well with the Oak and Spanish Chestnut, and some *Wellingtonias* planted with young plantations of the above would in years to come make quite a feature in the landscape—that is, provided the soil was suitable. Their pyramidal tops resemble so many church spires, they occupy very little room; and as it is likely to prove one of the tallest of trees its effect over the tops of Oaks 60, 70, or 80 feet high in after years may readily be imagined. Some that are here, averaging 45 feet high, towering above such plants as Laurels, Hollies, Yews, Laburnums, and Evergreen Oaks that range from 20 to 30 feet in height have a very good appearance from a distance. As a timber tree it does not appear to be of much value; two or three trees 30 feet high that we have cut down show that the wood is very soft and coarse.—A. HARDING, *Orton Hall*.

**VEITCH'S AUTUMN GIANT CAULIFLOWER.**—This is superior to any we have grown. I find that by sowing it in the open air we cannot have it fit for cutting in this locality until late in September, so that for the last two or three years I have sown a sprinkling of seed in a box and pricked out the plants into other boxes, growing them on in a cool house until we can safely plant them out. By this means we have them a month earlier than those sown outside. Some treated in this

way were cut the end of August this season, and a few fine heads are still at this date uncut. Nitrate of soda stirred in with the soil when hoeing is very beneficial.—JAMES DICKSON.

### SHEFFIELD GARDENS AND GARDENERS.—No. 3. ENDCLIFFE HALL,

SIR JOHN BROWN's residence, is situate on the same hillside as Mr. Mark Firth's, and overlooks the same beautiful valley; but at Endcliffe art has been freely exercised in the ornamentation of the grounds, while at Oakbrook Nature has had but a modicum of assistance. The mansion of Endcliffe is an elaborate structure replete with every requisite both of a useful and ornamental nature that art could suggest and capital supply; and the appurtenances and the surroundings are singularly complete and harmonious.

The sloping nature of the ground in front of the mansion suggested the ready formation of terraced and panelled gardens. These were designed with great taste by Sir John Brown, and the work was executed under his supervision. In the chief flower garden shrubs, flowers, statuary, and marble vases are pleasingly combined, no one feature unduly preponderating, and the whole amply relieved by lawns and Conifers, and near and distant tree-clad hills and verdant dales. In the flower beds dwarf shrubs, Conifers, and Heaths have permanent positions in the form of rings, margins, and central groups; flowers being planted in the spaces in spring and summer, and variegated and other shrubs taking their places in the winter; thus the garden is attractive at all periods of the year.

But, perhaps, the extensive and well-arranged glass structures constitute the most notable feature of the gardens. There are twenty-two houses, some of them very large and lofty, and so arranged that they form a lengthy, varied, and beautiful promenade—not in a direct line, for they almost encircle a certain part of the garden contiguous to the mansion. The central block is very imposing. It is a large tropical house with two wings. The chief portion is 35 feet high, in the centre of which is a mound or large raised bed in which Palms, *Dracænas*, &c., are planted, with an undergrowth principally of large-foliated Begonias, with fine specimens at the corners of the elegant Fern *Asplenium ferrulaceum*. The effect of this arrangement is extremely fine. The Palms are splendid specimens reaching the roof. *Scaevola elegans* is rarely seen in such condition, four remarkable clusters of flowers and fruit issuing from the stem, which impart to this noble specimen a truly elegant appearance. The seeds falling from the tree and settling in the moist crevices of the rockery germinate freely, producing numbers of young plants. Specimen *Livistonia* and *Phoenix dactylifera* are almost equally fine; specimens of *Dracæna brasiliensis* are 12 feet high; and a species of *Bambusa* has produced wonderful growths. At the north side of the wings raised beds have also been formed and planted chiefly with Tree Ferns, the ground being carpeted with *Selaginellas*, *Fittonias*, *Tradescantias*, and other suitable plants. The Tree Ferns are growing luxuriantly, and the entire arrangement is extremely enjoyable. In one of these structures *Caryota urens* is fruiting, as also is a vigorous specimen of *Monstera deliciosa*; *Astrocaryum mexicanum* is flowering, and the brightly coloured bracts of *Musa rosacea* contrast effectively with the noble foliage. A seedling form of *Blechnum brasiliense* with red-stemmed fronds is conspicuous. On the south side are many specimen stove plants of exhibition quality, and in a large plant of *Platycerium alcicorne* is a robin's nest in which young birds were reared, and from which they emerged in safety. All the specimens in this fine range of houses are in the highest possible condition, and the free and natural manner in which they are disposed enhances their beauty considerably.

Long ranges of glass are devoted to Peaches, some of the structures having rafters 22 feet long. The trees are very large, thinly trained, and healthy, and produce fruit 12 ozs. in weight. Vines are also largely grown and produce very heavy crops. A great number of medium-sized bunches being required, Mr. Stephens does not adopt close-spur pruning, but trains in young wood thinly, and thus ensures crops of great weight. In most of the vineries, early and late, Camellias are grown and trained to the back walls, and in some instances narrow beds are formed at the back of the inside borders next the paths and planted with Camellias. The Vines do not apparently suffer in the least, while the Camellias grow and flower with great freedom—in fact, blooms are cut in profusion from August in the earliest vineries, to June in the late houses.

Few plants can be cultivated under Vines more profitably than Camellias, and in few places are they better so grown than at Endcliffe Hall.

Houses are also provided for plants, including Orchids. The Orchid house is glazed with rough plate glass and never shaded, and the plants, owing to the growth being so well matured, flower with great freedom; but a little shading at times would improve the foliage. Several Orchids were flowering, including a good plant of *Lycaste Skinneri alba*. The Vanilla was also fruiting freely on the roof. Of the ordinary forcing houses it is not necessary to speak, except that in the Strawberry house Tomatoes were bearing a fine crop, an excellent lot of Strawberries being in readiness to follow at the proper season.

The kitchen garden is divided from the public road by iron palisading, through which hundreds of "Sheffielders" criticise the crops, which with the general neatness of the enclosure will bear criticism, as, indeed, will every portion of Sir John Brown's well-appointed garden, as superior culture and excellent order pervades the entire establishment.

#### RIVERDALE.

Somewhat lower down the declivity above referred to, and nearer Rammoor is this, the residence of C. H. Firth, Esq., a gentleman who evidently cherishes his garden, and has been fortunate in securing the services of a gardener of unquestionable ability in Mr. Abbott. The grounds though not large are of diversified aspect; the lower portion—the bed of the dale, through which a tributary of the river Porter rushes impetuously down its narrow bed under a canopy of foliage, being wildly picturesque. It was this wilderness that doubtless suggested the name, a very appropriate one, for the estate; and it is this dale, too, rich in alluvial soil and the decomposed vegetation of ages, that yielded the compost which, with otherwise skilful culture, produces the splendid Grapes for which Riverdale is locally famed; justly famed, too, for better conditioned Vines and finer Grapes are rarely seen in any garden. The vineries, a light and admirably constructed range, are on higher ground, and it must have been a work of no small magnitude wheeling the soil for the borders up a hill so steep and so long: yet it was labour wisely incurred, when it is found that the average weights of the bunches of such Grapes as Black Hamburg, Madresfield Court, Golden Queen, and Mrs. Pearson is each year 5 to 6 lbs., and of Alicante 8 to 9 lbs., excellently formed firm bunches of well-finished fruit, except as to one variety, Mrs. Pearson, which unfortunately rusts just as it commences ripening. The bunches of it are splendid, certainly amongst the finest that have ever been produced, and the fruit is of superior quality and flavour, but marred in appearance by the rust. Golden Queen is fine and free from rust, but not quite free from the dark stain in the flesh (for it is not in the skin), that so often detracts from the appearance of this Grape, and it is not esteemed nearly so highly at Riverdale for flavour as is Mrs. Pearson. Mr. Abbott has detailed his practice in a paper published in another column, which is worth reading, as he is undoubtedly a master in the art of Grape culture, and it is not necessary to refer further to the subject here.

Equally well are Peaches and Nectarines grown in the same range. The trees are manifestly in first-rate condition, and, as I was informed by competent judges, invariably produce remarkable crops of fine fruit. At right angles with the chief range, and connected with it, are span-roofed houses for plants, also for Cucumbers and Melons. Of the last-named fruit the remnant of the crop of Riverdale Green-flesh was hanging—a particularly handsomely netted fruit of medium size, and esteemed for its rich flavour: it was raised by Mr. Abbott. A small, smooth, egg-shaped Tomato of firm flesh and good quality, also raised by Mr. Abbott, was producing a heavy crop in one of the houses. The ground having a very sharp slope these houses are erected on arches, the space beneath being utilised for Mushroom houses, root stores, tool sheds, &c., readily entered from the lower ground—a compact and excellent arrangement.

In the grounds adjoining a number of moveable frames, employed for protecting the Vine border in winter, were occupied with Cucumbers, referred to for the purpose of noticing two varieties that are considered specially adapted for this mode of culture—namely, *Kelway's Prince of Wales* and *Myton Hall*. They were bearing wonderful crops. The former is of the Telegraph type, and excels that variety for frames, but is not equal to it for cultivation in houses. *Myton Hall* is a very dark green fruit with scarcely any neck; it is of good

size and very prolific. Although not widely known, it is considered by Sheffield gardeners one of the most useful frame Cucumbers in cultivation. It is undoubtedly very good and apparently quite distinct.

An attractive and useful mode of growing Red Currants is also noticeable. The trees are standards, having stems from 3 to 4 feet high, the branches forming the heads being trained at regular intervals down umbrella-shaped wire trellises about 3 feet in diameter. The thin disposition of the branches, which receive all the light and air possible, not only induces great fruitfulness, but the crop hangs until the approach of winter, and is readily protected by hexagon netting, which is thrown lightly over the heads and secured to the stems. These umbrella-shaped Currant trees growing by the side of the walk are very ornamental and convenient.

A new and excellent kitchen garden has been made at some distance from the house, noteworthy for the fine rows of Peas in full bearing in October, and especially a new variety selected by Mr. Abbott from G. F. Wilson, and named *Hallamshire Hero*. As grown in comparison with all the newer and more famed varieties in commerce this new Pea held its own most creditably. It was growing about 3½ feet high, the rows being closely covered with long dark green scimitar-shaped pods. It bears some resemblance to *Marvel*, but surpasses that variety by its darker colour, more sturdy growth, and larger pods. It is of superior quality when cooked, and is the only Pea, so far as I am aware, that has defeated *Telegraph* in single-dish competition, both the varieties being represented in their best condition.

Although the gardens at Riverdale are not extensive, they are as well worthy of inspection as some establishments of greater size and wider fame.—J. W.

#### GRAPES WITHOUT FIRE HEAT.

HERE in North Lancashire we are accustomed to have good crops of well-ripened fruit without fire heat. My greenhouse, 26 feet by 15 feet, a lean-to, has eight Vines in front planted in outside borders three years ago. This season I have cut 1 cwt. of good well-coloured Grapes, a portion of which I sent to Covent Garden Market. The salesman appends to the sale note, "A very nice lot."

To say that this season they have been grown entirely without fire heat would be untrue, but I may state that very little coal has been used—not more than 10 to 15 cwt. This may seem very little, but I must add that I sent this spring for a cartload of tanner's spent bark, which can be purchased here for 1s. a load, with which I "bank-up" the fire, and it is wonderful what a saving it effects in the fuel. I have no doubt whatever that I should have had the Grapes ripe without fire heat, only they would have been a little later. I commenced cutting early in September. The varieties I planted are Black Hamburg, Black Alicante, and Lady Downe's.—J. A.

#### CARNATIONS AND PICOTEES.—No. 10.

As this season has been so unfavourable in many cases the plants will be late in rooting, and it will be necessary to use pots of the smallest size to root the layers in. Those plants which may not be rooted by the first week in November should be planted closely in a bed under glass. After a week or two, if the weather is mild, most of them will be rooted; they can then be potted off in the ordinary way. Those that may not be rooted can be allowed to remain in the bed until spring and then planted out. Of course it will be necessary to lift the plants carefully so as not to break any of the rootlets.

Now is the time to obtain any varieties that may be required. In all cases try to procure strong plants. Take care not to let the soil in the pots become saturated with water, as, should frost set in or dull weather occur, the plants in many cases will perish, or otherwise they are liable to become cankered. After watering see that the foliage is dry before closing the frames. Old plants may have the lights propped up so that a current of air may pass in amongst the pots. Planting in beds may be continued to the middle of November provided the weather and the ground are suitable for that purpose; after that time planting should be deferred till the latter end of February or early March. All late plants are liable to be disturbed by the frosts. To prevent this place them firmly in the ground and use a few hooked sticks pressed into the soil, allowing the hooks to press on the lower leaves so as to keep them in position. Seedlings will require examining frequently if in the

open to prevent the ravages of slugs, and if the plants are in frames aphides should be looked after. The best insecticide is Gishurst compound, which I use in the proportion of 2 ozs. to a gallon of water. I give the plants infested with aphides a good syringing overhead with the mixture, allowing it to dry on them. In a few days if the insects are all gone the plants may be syringed with clean water.

Having seen most of the best varieties I give my selection which I intend to grow, giving precedence to the new varieties.

*William Spoor*.—A scarlet bizarre of the finest quality; will in my opinion take a first rank. It is from Dreadnought crossed by Mars. It was raised and is being sent out by Mr. Adams of Swalwell near Gateshead.

*Dr. Abercrombie*.—Was awarded a first-class certificate at the National Society's Exhibition at South Kensington. A fine heavy red-edged Picotee, very distinct in colour.

*Baroness Burdett Coutts*.—A medium-edged purple with fine broad petals. It is a great addition to its class. It also was awarded a first-class certificate. Both the latter varieties will be sent out by Mr. Charles Turner, Royal Nurseries, Slough.

Of older varieties the following list in my estimation contains all or nearly all the varieties worth growing.

*Scarlet Bizarres*.—Admiral Curzon, Dreadnought, Garibaldi, Lord Napier, Mars, Mercury, Sir Joseph Paxton, and True Briton.

*Crimson Bizarres*.—Aldion's Pride, Captain Stott, Eccentric Jack, Graceless Tom, Jenny Lind, John Simonite, J. D. Hextall, Harland, Lord Milton, Lord Raglan, Marshal Ney, William Murray, Rifleman, Lamplighter, Rev. Geo. Rudrick, Unexpected, and Warrior.

*Pink and Purple Bizarres*.—Falconbridge, Fanny, James Taylor, Sarah Payne, and Satisfaction.

*Purple Flakes*.—Dr. Foster, Earl of Stamford, Juno, James Douglas, Lord Derby, Mayor of Nottingham, Premier, Squire Meynell, and Sporting Lass.

*Scarlet Flakes*.—Annihilator, Clipper, James Cheetham, Dan Godfrey (Holmes), John Bayley, Illuminator, Mr. Battersby, and Sportsman.

*Rose Flakes*.—Crista-galli, E. S. Dodwell, James Merryweather, John Keet, James Carter, Mary Ann, Maid of Athens, Mrs. Dodwell, Rose of Stapleford, Sibyl, and William Carrick.

*PICOTEES*.—*Red-edged*.—Brunette, Clara, Countess of Wilton, Forrester, J. B. Bryant, John Smith, Lord Valentia, Mrs. Small, Mrs. Fuller, Mrs. Bower, Mrs. Dodwell, Morna, Master Norman, Princess of Wales, Rev. F. D. Horner, Thos. William, William Summers, and Violet Douglas.

*Purple-edged*.—Alliance, Ann Lord, Alice, Chanticleer, Cynthia, Ganymede, Her Majesty, Isabella, Jessie, John Delaforce, Mary, Minnie, Mrs. Douglas, Mrs. Niven, Mrs. Summers, Norfolk Beauty, Nymph, Picco, Prima Donna, Silvia, and Zerlina.

*Rose and Scarlet-edged*.—Charles Adams, Edith Dombrian, Estelle, Ethel, Fanny Helen, Juliana, Lady Louisa, Miss Horner, Miss Lee, Mrs. Love, Mrs. Payne, Miss Wood, Morning Star, Mrs. Adams, Mrs. Allcroft, Mrs. Nicholls, Mrs. Lord, Obadiah, Royal Visit, Teresa, and Victoria.—GEORGE RUDD.

#### MELON CULTURE—THE DRYING-OFF PROCESS.

NOTWITHSTANDING the eighteen years' experience of Mr. Pettigrew in watering Melons until the fruit is ready for cutting; and the successful results of that practice, there will probably be several cultivators who will not accept the soundness of the system detailed on page 301. I am not one of them. It is considerably more than eighteen years since I had the pleasure of securing prizes for Melons at every important London fruit show at which I competed, and the plants were watered carefully, yet regularly, until the very day on which the fruits were cut. At no time were the pits and frames saturated, but sufficient water was given to the roots to keep the plants in a healthy growing state, and the atmosphere always sufficiently moist that, with syringing, kept the foliage quite free from red spider; the leaves in fact were as fresh and green when the fruit was ripe as at any period of growth.

Nothing is easier than to have excellent second crops of Melons from early plants when that generous system of culture is adopted, and I could never cut fruit of such high quality, as I have often tried, by adopting the drying-off process. A somewhat lessened supply of water than usual when the fruit is about changing will not do harm provided—and this is very important—the foliage is perfectly clean and healthy; but rather than have flaccid foliage and red spider I would, and

always shall, water and syringe until the very time of cutting the fruit. When this system of culture is practised all that is necessary for securing highly flavoured fruit is to sever it from the plants as soon as it has fairly commenced ripening, and place it on a warm dry shelf in the sun for a day or two to finish, and then, the variety being good, it will satisfy most good judges of Melons.

But to achieve success the plan must be carried out intelligently, and heat must be afforded in proportion to the water given. With much moisture and the low temperature of many dung frames during a cold summer such frequent and continuous watering is not applicable. Neither must the plants be crowded at one time and excessively pruned at another; but the growths should be thin from the first, and daily pinching with the finger and thumb of the laterals not wanted should prevent the necessity of pruning with the knife. Stout good foliage is then produced that will not scorch unless neglected, and that is not likely to be devoured by red spider. No foliage is more liable to injury by rough handling than that of Melons; and if it withers, by whatever cause, before the fruit commences ripening, high quality and superior flavour are out of the question.

It were well if the subject of Melon culture were pondered over during the approaching winter, for it is questionable if, with all the numerous varieties that are ever coming to the front, Melons now, as a rule, are better than they were thirty years ago; but they ought to be, or where is our vaunted progress?—A NORTHERN GARDENER.

#### NOTES ON USEFUL STOVE FLOWERING PLANTS.

THE *Eucharis amazonica grandiflora* is one of the most useful of stove plants either for the decoration of rooms or for cutting. It is of easy cultivation, and with a good stock of plants it may be had in flower all the year round. When plants become large and root-bound they should be turned out of their pots, divided and repotted. The soil should consist of very fibry loam broken into pieces about the size of pigeons' eggs, to which should be added a good sprinkling of sheep droppings, equal parts of fresh rough leaf soil, and half-inch charcoal with a dash of sand. When draining our pots we place a large oyster shell over the hole with four or five others round it, on which is placed a mixture of half-inch charcoal and potsherds to the depth of about 2 inches, over this is placed a layer of thin fibry pieces of turf. The plants should not be potted firmly. When the process of potting is finished each leaf should be supported by a stick until the plants are established. Potting may be performed at any season of the year.

They delight in a free use of the syringe at any time, even when at rest. When a few fresh leaves have been made and matured the plants may be moved to a shady corner in a coolinery, where they should remain for five or six weeks, syringing them twice daily to keep the foliage fresh. At the expiration of the above time if again placed in moist heat they will throw up flower spikes, and weak liquid manure may then be supplied with advantage. When out of flower the plants must remain in moist heat until they have matured a few new leaves, when they may be moved to their cool resting place again and introduced to the heat when required to flower. They are improved by being placed in a shady quarter out of doors in summer during their resting period, for when so treated they produce much finer blooms and in greater numbers. Our plants flower three times a year—July, November, and April; but with a greater number of plants and more space at command we could easily have them in flower every month in the year. We have only *Eucharis grandiflora* and *E. candida* in our collection. *E. candida* only differs from *E. grandiflora* in the foliage being rounder and smaller, the flower trusses are also more compact.

Plants which may by over-watering or some other mismanagement have become unhealthy should be turned out and the soil shaken from the roots. The plants should then be washed in tepid water, both bulbs and foliage, sprinkling the roots well with silver sand; then if repotted in the compost previously recommended, placed in a moist atmosphere and syringed freely they will soon revive.—H. ELLIOTT.

#### BOTANICAL ORTHOGRAPHY.

THE question of spelling the names of species and varieties with capital initial letters has been raised in the review on my notes on Lilies, page 328, and referred to as by no means

general or desirable. I should like to hear the opinion of other judges on this point. I was an entomologist before I knew anything of horticulture; and in the accentuated list of British Lepidoptera published by the Entomological Societies of Oxford and Cambridge, I find capital letters used for both species and varieties, and I prefer that mode as the simplest.

In the other "usual" mode the genus is spelt with a capital and the specific name with a small initial letter, except where the word is derived from a proper name; and herein I think lies the element of confusion. Either all the specific names and those of varieties should be spelt with a small initial letter, or all with capitals. The present mode, in my opinion, fosters confusion between generic and specific names where spelt with capitals.—ALEXANDER WALLACE, *Colchester*.

#### NOTES AND GLEANINGS.

CHRYSANTHEMUMS AROUND LONDON are generally late this year, consequently we find that the Kingston and Surbiton and the Croydon Chrysanthemum Societies have found it necessary to postpone their Shows, the last named from the 13th to the 21st, and the former from the 20th to the 27th of November. That there will be some good blooms cannot be doubted, but we fear from the want of sunshine the wood is not sufficiently ripened for large and neat blooms. The Japanese varieties, which are now as numerous as incurved, will be generally fine, as they can be grown with stronger and more succulent wood without displaying any coarseness of petal, which is a great blemish in an incurved flower. We also find that in places where the plants were potted early and grown luxuriantly through the early part of the summer, that they are later than those that were allowed to remain in 32-size pots until the wood became hard. The early shows around London will, we fear, be found wanting in quantity, while before the last takes place many varieties will be past their best. Those exhibitions occurring from the 18th to the 22nd will be the best.

THE members of the LIVERPOOL HORTICULTURAL ASSOCIATION recently held their first meeting of the season for the purpose of reading and discussing practical essays relating to gardening. There was a good attendance, and the first paper was supplied by the Vice-President, Mr. Bardney, on ventilating vineries. The paper was an interesting one. The essayist pointed out the caution that was necessary in admitting air to Vines when subject to very early forcing and in the early stages of their development, while on the other hand abundance of air was requisite in the production of first-class Grapes, without which it was impossible to obtain good colour and finish. Before reading the essay Mr. Bardney pointed out the importance of allowing under gardeners the privilege of attending the Society's meetings. Their case had not been considered by the members of the Association; it was resolved that their admission should be considered at the first general meeting. Several members took an active part in the discussion, and the meeting terminated with a vote of thanks to Mr. Bardney, and to Mr. Faulkner the President of the Association.

WE have a grand old hardy plant in LOBELIA CARDINALIS, which produces at this time of the year large panicles of bright scarlet flowers; but there is a great variation in the coloration of the flowers on different plants—some are deep cardinal red. Whatever is the shade of colour they are well worth growing. It has been introduced into this country from the United States since 1629.

IN the great family Compositae the really ornamental species are comparatively few. Here and there, however, in the family we have perfect floral beauties. Take, for instance, SENEIO PULCHER when in full flower, and you would hardly imagine it to be a congener of the common Groundsel. It is of recent introduction, and is a grand addition to our border plants, as it is quite hardy. The large leathery leaves are ornamental, but the flower spikes rise about 2 feet high and are topped with several flowers, which are quite 3 inches across, with the ray florets of a purplish-magenta colour and largely developed, and the central florets yellow and not very conspicuous. We have frequently seen it this year with the foliage attacked by a species of fungus, which is undoubtedly due to the prevalence of wet.

ANOTHER very handsome little Composite is NEJA GRACILIS, and nearly hardy. The foliage is very slender and Grass-like, of a deep green colour; while the flowers, which

are about an inch across and produced in great profusion throughout the summer months, only cease when the frost comes. They are of a bright golden yellow colour, which contrasts beautifully with the foliage. It grows well on a rockery or in a warm border, and sufficient stock is very easily procured, as the cuttings strike very freely, so as to keep a few plants through the winter sheltered in a cold frame or cool house.

A VISIT to the MELBOURNE NURSERY at Anerley, which is so ably conducted by Mr. Wills' manager Mr. Bausé, is never devoid of interest. There is always something to admire, and were there nothing to be seen but the collections of handsome Dracenas and Crotons a visitor would be amply rewarded. The healthy vigorous appearance of the general stock of plants is highly satisfactory and creditable. Among many other excellent plants the following especially attracted our attention during a recent visit. *Curcuma Roscoeana* is a pretty ally of the turmeric-yielding *C. longa*; the flowers are of a yellowish tinge, and are borne on a stout round spike of imbricated scoop-like orange-red bracts. The plant owes its attractiveness to the bracts, which retain their colour long after the flowers have faded. The leaves are broadly lanceolate and gracefully drooping. *Saxifraga Fortunei* tricolor resembles in form and habit the well-known *S. sarmentosa*, but the leaves are prettily variegated with white and pink, the colour being much brighter in the young pendulous plants, the leaves of which are reticulated with a rosy pink. *Rivina levis* variegata has variegated foliage, with which the long racemes of scarlet berries contrast most pleasingly. *Dioscorea mosaica* has broad ovate leaves; the upper surface is dark green marked transversely with small bars of white, while the under surface is of a rich dark purple tint. It is dwarf in habit, and an excellent plant for the stove. Of the numerous Ferns grown there the new *Adiantum Bausei* at once attracts notice owing to its distinct and elegant appearance; *Gymnogramma Pearcei* has graceful and exquisitely divided fronds; and *Onychium auratum* is nearly equally ornamental.

THE highly attractive BEGONIA MARTIANA is now in excellent condition at Chiswick, bearing numbers of its large bright pink flowers. This fine species is one of the tuberous-rooted section, and a native of Mexico. It succeeds under similar treatment to allied species and varieties, the temperature of an intermediate house being best suited to its requirements. A number of seedling Begonias are also growing in the same house as the above, and among them are several of considerable merit as regards the size, substance, and colours of the flowers.

ONE of the best plants for decorative purposes during winter is the old SALVIA SPLENDENS, the bright scarlet flowers and bracts of which impart quite a gay appearance to a greenhouse or conservatory for a considerable portion of the dull season. It succeeds best and makes finer specimens when planted out during summer than if grown in pots all through the year.

A CORRESPONDENT "H. T." writes that he has had a sad lesson this year in regard to turning CYCLAMENS out of their pots during the summer. He always turned the plants out in the open borders during previous years and with good effect, but this year most of them have lost all their roots from the excessive wet, and several large corms have decayed that bore last year nearly three hundred flowers at one time, and most of the larger corms are much injured.

THAT very peculiar Orchid CYCNOCHES WARSCEWICZII, which Mr. Ball exhibited at the last meeting of the Royal Horticultural Society, is an admirable instance of the phenomenon termed dimorphism. The flowers, as described in our report, are of two very distinct forms; the small one producing pollinia freely, but is apparently defective in the ovary, while the large flowers appear to possess perfect ovaries, the pollinia being either absent or deficient in fertilising properties. It is thus probable that the pollinia of the small form may by insect aid be conveyed to the stigma in the large form, fertilisation being effected as in monocious plants.

THERE was recently an excellent display of ZONAL PELARGONIUMS in one of the houses at Chiswick, several of the varieties being of great merit. The most noticeable were the following:—A. F. Barron (George), vigorous habit, flower very large, bright scarlet with small white eye; truss good. Mount Etna has a compact truss of fine scarlet flowers with white eye. John Gibbons, rich glowing scarlet, flowers and truss large. Louis, fine amaranth with a scarlet tinge in the upper petals. Mrs. Wright, excellent pink, neat flower and truss, upper petals

white at the base. Lizzie Brooks, a superb flower, fine in outline, dark salmon scarlet with white eye; full truss. Lady Sheffield, deep pink, upper petals white at the base; truss large. The last five admirable varieties were raised by Mr. Pearson. The best doubles were Wonderful, good scarlet; Mrs. Trevor Clarke, fine white; Charles Schwind (Pearson) extremely good, bearing enormous trusses of intensely deep scarlet flowers. The effect of such a combination of bright colours and profusion of flowers was remarkably good.

— AT the BRISTOL AUTUMN SHOW of *Chrysanthemums*, plants, and fruit, upwards of thirty special prizes are offered by supporters of the Society. The silver Knightian medal of the Royal Horticultural Society will be also given for the best grown plant of *Chrysanthemum* in any class, and the bronze medal for the best three bunches of Grapes on any stand.

— WE find that by the agricultural returns recently published, that ORCHARDS IN GREAT BRITAIN continue to increase in extent, occupying now 175,000 acres as compared with 165,000 acres in 1878. Market gardens have also increased, and in many places the collectors report that the demand for fresh vegetables for the neighbouring towns and the facilities afforded by the railways for bringing produce to London have led many farmers to devote a small portion of their land to vegetables and bush fruits.

— MR. BARDNEY describes ECLIPSE CAULIFLOWER as a very useful variety, and will as it becomes well known commend itself to the majority of growers. It does well in early summer and turns in quickly. It is very dwarf and consequently takes up but little room, and produces splendid heads, which are remarkably white. The last batch of it are now producing fine heads. It contains but few leaves and is not well adapted for protecting itself against frost.

— AMONG the numerous foreign fruits which are imported into this country POMEGRANATES appear to be particularly abundant in London at the present time. The Myrtaceous tree, *Punica granatum*, which produces this rather pleasant fruit, grows on the shores of the Mediterranean Sea, and it is also cultivated in the countries of that region, and from thence our principal supplies are obtained.

— MR. JAMES BURDEN succeeds Mr. Innes as gardener to Sir William Field, Bakenham, Englefield Green, near Staines; and Mr. EDWARD GEORGE, Ballinasloe, has been appointed gardener to T. W. Boord, Esq., M.P., Ockenden, Cuckfield.

— THE beds of CHINA ROSES at Gunnersbury Park have been very bright this season owing to the immense number of flowers the plants have borne. The flowers until lately were plentiful, and will continue to expand until the frost checks them. Mr. Roberts finds the buds very useful for bouquets, &c.

— WITH regard to the observations about EARTHING UP POTATOES by "AMATEUR," on page 322, "A SURREY PHYSICIAN" writes as follows:—"Certain rows that were earthed up, and certain others of the same variety not earthed but otherwise similarly treated and planted side by side, were both equally productive; therefore there may be certain circumstances in which, so far as amount of produce is concerned, earthing-up is superfluous, and from the results of his experience it is probable that "AMATEUR" is of a similar opinion. I am glad also to inform "AMATEUR" that the Magnum Bonum Potatoes I have grown are excellent in quality."

— It is not perhaps generally known how valuable the pretty variegated *OPHIOGLOSSUM SPICATUM* is for table and room decoration. When the plants are grown in a little heat the foliage assumes a more upright character than is generally seen, and as it then gracefully arches the plants are extremely attractive. The narrow leaves are clearly margined with white, and being smooth and persistent endure the dry air of rooms for a considerable time without being injured. Well-grown plants are equally useful for the margins of greenhouses and conservatories. When flowering the purple Grape Hyacinth-like spike contrasts effectively with the white foliage; but whether in or out of flower the plant is very useful for decorative purposes. As testimony of the increasing popularity of this *Ophioglossum* we recently observed a batch of plants in Messrs. Veitch's nursery, a great portion of which were labelled "sold." Visitors have seen, admired, and purchased them.

— IN the same nursery the PITCHER PLANTS are highly worthy of note and inspection. They have never been finer

than during the past few weeks, and for some time longer they will continue fresh. There are thousands of pitchers depending from the roof, producing an effect altogether unique and probably unequalled. The pitchers throughout are extremely fine, all the best species and varieties being represented. Especially noticeable are some excellent forms of *Nepenthes Rafflesiana*, the richer and darker *N. Hookeriana*, with the distinct and valuable hybrids *N. hybrida maculata*, *N. Chelsoni*, and several others. Young plants are being raised by thousands to meet the great demand for these novel and beautiful plants which, unlike some others, appear to be always in fashion.

— THE ORCHIDS IN AND OUT OF FLOWER cannot be passed in silence. Foremost to arrest attention is the grand *Cattleya exoniensis*, one of Mr. Dominy's most successful achievements in hybridisation. Although the flowers are not so large as those produced by another plant last year, yet the great number on the specimen and the remarkable combination of chaste and gorgeous colours command general admiration. The beautiful *Cattleya labiata* is flowering now, also the finely marked and very bright *Odontoglossum Londesboroughanum*. A fine spike of *Saccolabium Blumei majus* arrests attention, and several other Orchids contribute to the display. Of the plants not flowering the great batch of *Phalaenopsis* imported only ten weeks ago are not only established, but many of them are producing flower spikes. A number of plants imported at the same time of *Angraecum sesquipedale* are similarly well established. The plants are in very small pots, or rather tolerably deep saucers, and from these small receptacles fleshy roots are issuing on all sides. The smaller the pots in which Orchids are placed the better the plants appear to thrive. It is wonderful to see the fine healthy growths produced by *Dendrobium* in saucers from 3 to 4 inches in diameter. Mr. Dominy has long been impressed in favour of small pots for Orchids, and each year's experience convinces more fully of the soundness of his convictions on the point.

— IN few gardens of moderate extent is a more select collection of Orchids to be seen than at THE FIRS, SYDENHAM, the residence of C. Dorman, Esq. Mr. Coningsby, the gardener there, is a young man of great intelligence, and takes more than an ordinary interest in his profession, and he is fortunate in possessing an enthusiastic and liberal employer. Four houses are devoted to Orchids, which include most of the best species and varieties, as well as some of considerable rarity and a few importations which have not yet flowered. On the occasion of our visit there was quite a good show of flowers, much better than could be expected at this time of year. The *Oncidium* were in fine condition and great variety, the most noticeable being *O. varicosum*, *O. cucullatum*, *O. ornithorhynchum*, the beautiful *O. dasystyle*, and *O. incurvum*. *Laelias* were also flowering freely, and *Cattleyas*, such as *C. Loddigesii* and *C. exoniensis*, were attractive. The remarkable *Masdevallia chimera* was bearing several flowers with their curiously marked hairy long-tailed sepals, and another distinct species of *Masdevallia* was flowering—viz., the yellow *M. Davisii*, a native of Peru. The handsome *Zygopetalum maxillare* was bright with its pretty flowers, the blue labellums of which are so conspicuous. The attractive *Colax jugosus* was also bearing several flowers, the sepals being of a creamy tint, petals white striped with purple, and the labellum is white dotted and barred with rich purple. But Orchids are not the only plants that are well represented and well grown at The Firs, for the collection of *Crotons* is extremely fine, and includes all the newest and best varieties. In the stove is a very fine specimen of *Nepenthes Rafflesiana* bearing twenty-two large and well-coloured pitchers.

#### WINTER BEDDING PLANTS.

A FINER example of the excellent effect that is producible during winter by the tasteful employment of Conifers and small variegated and other shrubs was perhaps never seen than at the last meeting of the Royal Horticultural Society. On that occasion the vestibule at the entrance of the gardens in Exhibition Road was completely filled in the most artistic manner by Messrs. Charles Lee & Son of the Royal Vineyard Nurseries, Hammersmith, who were worthily awarded a gold medal for the magnitude and excellence of the display. The shrubs, &c., were arranged in various designs, one of which we submit. The plan (fig. 37) combines simplicity with elegance, and is suitable for a large or small place, according to the size



and number of plants employed. It is engraved on a scale of 1 inch to the foot. The following shrubs were employed in furnishing the design, which was greatly admired by all visitors :—

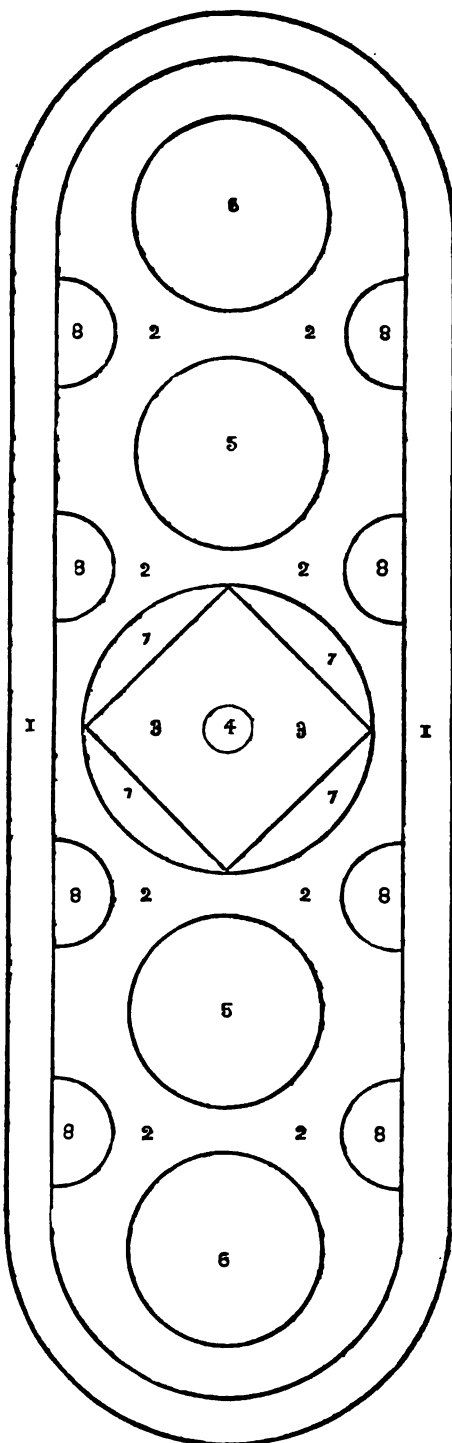


Fig. 37.

- |  |  |
|--|--|
| 1, Edging : <i>Euonymus radicans</i> variegatus. | 5, <i>Cupressus Lawsoniana argentea</i> .  |
| 2, Ground : <i>Euonymus microphyllus</i> .       | 6, <i>Cupressus Lawsoniana lutea</i> .     |
| 3, <i>Euonymus latifolius elegans</i> .          | 7, <i>Buxus nana variegata</i> .           |
| 4, Pyramid : <i>Retinospora ericoides</i> .      | 8, <i>Euonymus aureus elegantissimus</i> . |

TOO-MUCH-ALIKE ROSES.—I am now sending out, as suggested by "OXONIAN," circulars to Rose exhibitors with the

following queries—1, What Roses do you consider too much alike to be exhibited on the same stand? 2, If so exhibited ought the stand to be disqualified? 3, If not, what amount of bad marks should be given for their presence? As I have said, I fear there will be difficulties, not only because some growers see differences where others do not; but that, even supposing that they are allowed to be similar, it would make a great difference whether they were shown in stands, say of seventy-two, or twelve. In the former case they could hardly bring so much discredit to the stand as in the latter.—D., Deal.

#### VALLOTA PURPUREA CULTURE.

As many fail in the cultivation of the above beautiful autumn decorative plant, and as a successful grower of it for several years, I will detail the mode of culture adopted. Having a few plants to start with, examine the pots to see if the drainage is perfect or if the plants require a shift into larger pots. If the latter is the case, shake out some of the old soil and repot the plants in pots a size larger, employing a compost of light sandy loam with about one-sixth of well-decomposed cowdung; well drain the pots, pot moderately firm, and place the plants in a cold pit. Keep them close for a few days till they have produced new roots, gradually giving more air until they are removed to a cool greenhouse or vinery for the winter, where all the attention they will require will be to see that they do not become dry nor receive too much water.

By this mode of treatment they will preserve the foliage green all the winter. As the season advances more water will be required, and it may be applied liberally if the drainage is perfect. A cool vinery is the best place for them, where they may remain until the middle of June; after that they may be placed out of doors on the east side of a wall or hedge or in any partly shaded position, and a slight sprinkling over the foliage in the afternoon is beneficial to them. About the middle of August remove them to a more sunny situation, and supply liquid manure at each alternate watering. I have found a weak solution of guano and soot suit them the best. By the beginning of September they will show signs of flowering. On the blossoms beginning to open they will require placing under cover, as the wet injures the flowers.

The foregoing method is especially adapted for single bulbs, but if large masses are desired the same method may be adopted. The most desirable and readiest method to obtain large masses is to place about nine bulbs in a 10-inch pot. The *Vallota* is readily propagated by offsets or by seed; the first mode is the quickest.—J. G.

#### WEASELS DESTROYING THRUSHES AND BLACKBIRDS.

To preserve small fruits from the birds many expedients have been resorted to with only partial success. Scarcers answer only for a time; nets, of course, exclude the birds; but so many persons in gardens busy themselves with bush fruits that, though the nets are readily lifted, they are not as carefully readjusted, and any displacement is soon taken advantage of by the birds.

Our plantations of bush fruit were covered with nets small enough in the mesh to exclude birds, but for reasons above given thrushes and blackbirds found their way inside and were evidently quite at home when weasels appeared upon the scene. Nothing ever made the depredators so anxious of escape from the plantation as one of these smart little animals. It is generally considered that weasels follow their prey by scent, which may hold good when they pursue animals, but that they act by sight I had recent demonstration. A blackbird was turning up the ground with its beak near a batch of Cauliflower plants. I stood watching the bird, when with a bound of about a yard a weasel darted from the shelter of the Cauliflowers and seized it. I afterwards found that the teeth of the weasel had penetrated the brain at the back of the head.

I have seen the weasels dragging mice about to their holes. In a nest of young rats the weasel's entrance is soon followed by a fearful squealing, the whole lot falling quickly beneath the teeth of the weasel. Though a weasel will bring a rabbit to earth with much dexterity and not scruple to attack a hare, yet I have no proof that the animal will attack adult rats. The weasel, however, preys on moles, not infrequently being taken in traps in their runs. Weasels, notwithstanding their vermin-destroying propensities, are not safe animals to en-

courage, as they do not discriminate between the enemies and the friends of those who tolerate them.—G. ABBEY.

#### HYPERICUM OBLONGIFOLIUM.

THIS handsome plant is undoubtedly one of the most attractive and useful species of the large genus *Hypericum*, and for brightening a shrubbery or mixed border at this season, when all is so dull, it can scarcely be surpassed. The flowers are

large and produced in profusion, the petals possessing great substance, and being of an extremely bright yellow colour. The showy hue of the flowers is further heightened by contrast with the dark green shining leaves. The annexed figure, which represents a specimen we received from Mr. Moorman, conveys a good idea of the appearance of the individual flowers, but the cymes are usually considerably larger, each producing a dozen or more flowers, which resemble at a short distance single yellow Roses.



Fig. 38.—*HYPERICUM OBLONGIFOLIUM*.

The species is a native of North India, where, on the Himalayas, it is found at elevations varying from 6 to 12,000 feet above sea level, and is therefore perfectly hardy in this country. The botanical traveller, Mr. W. Lobb, collected specimens on hills in the neighbourhood of Mufflong and Assam, and by him it was introduced to Messrs. Veitch & Sons' nurseries at Exeter and Chelsea, and it has for some time been flowering freely in the Coombe Wood Nurseries of that firm, producing a most cheerful effect amidst the surrounding greenery.

#### EUPATORIUM ODORATUM.

ONE of the many useful winter and spring-flowering plants is the above. Coming in as it does at a time when flowers, and especially white flowers, are in great demand renders it

the more valuable. Considering its easy culture and other good qualities it is a little surprising that it is not more extensively grown. Plants after flowering should be pruned and placed in a vinery to start them into growth, in order to obtain cuttings, which succeed with the same treatment given to Fuchsias in their earlier stages of culture. After the cuttings are well rooted they should be placed singly in 3-inch pots, employing good loam and sand. They must be pinched back frequently to prevent their becoming leggy. The next shift may be into 6-inch pots, which will be large enough to flower them in the first year. They should be grown in a temperature of 55° till the middle of May, and afterwards gradually hardened off, and when all danger of frost is past they should be plunged out of doors in a sheltered position, but fully exposed to the sun. In October the plants may be taken under cover, and by the end

of November they will commence flowering. Old plants come into flower the earliest, so that a succession of flowers may be had till April or May. It is a useful plant to cut from, the flowers lasting a long time after being cut, and for the decoration of halls and rooms the plants stand well. Its sweet perfume, somewhat resembling that of honey, and its beautiful dark green foliage adds an additional charm to the plants. —JAMES SKYRME, *Ellergreen, Kendal*.

### THE TWEED VINEYARDS, CLOVENFORDS.

In consideration of the importance of Grape-growing, and also the fact that there is no part of a gardener's skill that is more valued, a few notes on the above Vineyards, the property of Messrs. W. Thomson & Sons, may be acceptable to the readers of the Journal. Grape-growing privately and commercially are two entirely different matters. It must be satisfactory to know that Mr. Thomson has been successful in the work that he was so admittedly competent to undertake. The commercial prosperity of the Vineyards may be certified by the fact that the demand for the produce is not only continental, but some of the principal Courts of Europe are supplied with fruit by Mr. Thomson.

Those Vineyards are upwards of 3 acres in extent, the whole of which are nearly covered with glass. The houses are principally span-roofed; most of them are 200 feet long by 24 broad. They are all well supplied with hot-water pipes, which are evenly distributed over the surface. Mr. Thomson finds it absolutely necessary to provide plenty of heating surface especially for span-roofs, and he finds the plan economical in the end, for a considerably less quantity of fuel is necessary than where the piping is limited. The boilers are of the saddle and cruciform shape, by Meiklejohn, and perform their work satisfactorily.

The first house we entered contained all Lady Downe's, bearing fine market bunches of from 2 to 3 lbs. weight, evenly distributed over the house, large in berry and just finishing colouring. Another house at right angles to the one indicated, of the same dimensions, contained excellent examples of Black Hamburgh and Duke of Buccleuch; the latter being in excellent condition, perfectly free from spot, and well finished. Mr. Thomson finds it for market purposes an excellent summer Grape. As a predecessor to the Muscat of Alexandria it is a great favourite. He also emphatically declares that ordinary Hamburgh treatment is sufficient to insure success, and all nostrums such as grafting it on other stocks he does not find at all necessary.

Another span-roofed house contained magnificent bunches, principally of Black Alicante and Gros Colman; this latter was very fine, its large round berries so well developed reminded us of Plums, and some of the leaves measured 16 inches across. This variety, Mr. Thomson finds, does best on the Muscat of Alexandria stock, and is invaluable for market purposes; for the month of January he much prefers it to Barbarossa. The Vines are generally planted 6 feet apart, and two rods trained from every Vine. The practice of stopping to one or two eyes above each bunch is not rigidly followed, neither are they allowed to ramble at considerable distances. A happy mean is evidently followed with excellent results.

Mr. Thomson still follows the practice of watering at the periods of starting the Vines, again when the Grapes commence swelling, and towards the end of the season, each time giving very copious supplies, and the borders inside and out are mulched 3 or 4 inches thick with fresh cowdung. Also every year the inside and outside borders receive alternately a dressing of quicklime, which is found of great value. The glass used is 21-in., the panes being about 15 inches broad and 2 feet long. It may not be uninteresting to state that in four of the vineries 35 tons of glass were used.

We passed through several other houses of the same size as those described containing nearly the same varieties, one Muscat house being exceptionally fine. Muscats in their second year had made very fine rods, and were bearing about three bunches to each rod. This being for a late house contained an extra quantity of piping, about 2000 feet, or nearly half a mile. Another contained Muscats and the Duke. A number of varieties Mr. Thomson does not grow, but only such as he finds to pay for marketing. Early Grapes are not now attempted, neither are Pines nor Vines for planting, Grapes being the speciality.

In concluding our remarks we must not omit to mention the splendid collection of Orchids that are in perfect health.

They are not grown for commercial purposes, but more for the love the proprietors possess for them. In the East India house we noted *Vanda tricolor* and *V. suavis* very good, with leaves to the pot's edge; also *Lælia purpurata* and *L. anceps*. *Cypripediums* are also well represented by such as *Hookeri*, *Harri-sonianum*, and *villosum*. *Cattleyas* were also numerous.

A number of small span-roofed houses for the forcing of flowers are also worthy of mention. Nothing but the best of everything is grown for market purposes. In one of the stores we observed *Dipladenia boliviensis* was growing extensively as a stove climber, the flowers of which are invaluable for wreaths or bouquets. *Stephanotis* were also rampant, and *Gardenias* planted out were yielding choice flowers. In the cooler frames the white Wallflower Stock was predominant, being found so useful for the winter. Great quantities of *Pelargoniums* are grown at all times of the year. For winter blooming Mr. Thomson speaks highly of *Master Christine*, *Vesuvius*, and *Wonderful*; and amongst double pinks, *Madame Thibaut* is a deserved favourite.

The neighbourhood is also interesting to the visitor, where he can at leisure inspect some of the magnificent rugged Scotch scenery, wild and majestic as it is, the stupendous hills rising in some instances almost perpendicularly from the foot of the river Tweed, and sinking as suddenly into deep abysses; and amongst the mountain herbage the sheep are scarcely visible, while here and there are irregular plantations of Pines which add diversity to the scene. Ashby Hall, the seat of the late General Sir James Russell, where Sir Walter Scott wrote some of his most thrilling novels, Melrose Abbey, Abbotford and other places of historic interest abound in the neighbourhood. No genuine gardener who visits Clovenfords can fail to receive a courteous and genial welcome from the proprietor and his sons, and he will leave the place as I did with "food for reflection." —B. COWAN.

### THE WEATHER.

A DISTINGUISHED American once resident in England was accustomed to remark, in the pleasant way in which relations talk of each other, "that the one thing the English did not boast about was the one thing they had to boast of, and that was the weather." Also King Charles II., of larger climatic experiences than any other of our monarchs, used to say that there were more days in England in which you could be out in the open air all day than in any other country. Such a season as we have been passing through might have altered the opinion of either gentleman. The singular thing is the way in which America is supposed to have been affecting us, although I believe there is no case on record of a cyclone, as storms are now called, ever having been proved to have crossed the Atlantic. How the *New York Herald* makes out those mysterious warnings which, cabled across, come true so often, is certainly a great wonder, and the secret so far has been excellently well kept. Some kind of idea may be obtained from general broad principles.

Our normal state if they are not interfered with, which they very often are, is to have westerly winds. A westerly wind meeting with some check causing a whirl in it from left to right, of which the centre is depressed, is called now-a-days a cyclone. These cyclones have one special breeding place in the Atlantic, that is on the banks of Newfoundland. There the warm Gulf Stream meets the cold Arctic waters; there the moist west wind is run into by the north wind from off the east coast of Greenland, and the frequent result is very excitable weather. Now the banks of Newfoundland are considerably nearer to New York than they are to England, and the logs of ships arriving from there at New York are very suggestive as to the kind of weather which is taking its rise there. Hence (it is put forward by Mr. J. K. Laughton in a particularly interesting article on this subject in the *August Fraser*) —those forecasting ideas may possibly be obtained by the *New York Herald* people, which they formulate into those intimations of depressing disturbances or disturbing depressions which for so many months now have been affecting us in either way.

An anticyclone is happily in every respect the exact opposite of a cyclone. It remains where it forms; its centre is elevated instead of being depressed; it has generally calm light winds from the east rather than west; it brings with it almost invariably settled weather. It is therefore a very welcome notice in our daily forecast, and it will have been observed that of late it has not been quite such a stranger.

I called attention in February to the disturbing statement

which had come to us from the western land; whence came telegrams of depressions month after month with such fatal accuracy. I mentioned the American statement respecting the sinister effects of a simultaneous perihelion of the four giant planets. Since the cessation of those far too accurate cable warnings I have met with another American statement. This is to the effect that the four giant planets will not be all at their closest to the sun all together, and that if they were it would not produce any effect. The dates of perihelion passages are now exactly given:—Jupiter 1880, Neptune 1881, Uranus 1882, and Saturn 1883; also about May 25th, 1881, Mars will be at its nearest point to the sun.

Professor Colbert now states, in opposition to Dr. Knapp, who first started the alarmist theory: "We are not warranted in believing that the combined perihelion passage of the four principal planets will work more than from 3 to 7 per cent. more harm to the human race than is caused by Jupiter once in every twelve years or a little less, when he makes his perihelion passage alone." This conclusion he founds upon some elaborate figuring hardly fitted for our Journal. But the two opinions and statements are worthy of notice and knowledge. Mr. Pope would remark on it—

"Who shall decide when doctors disagree,  
And learned casuists doubt like you and me?"

—A. C.

## NOTES ON VILLA AND SUBURBAN GARDENING.

**FLOWER GARDEN AND SHRUBBERIES.**—Continue to keep beds, borders, and grass plots neat and fresh by the timely removal of leaves and wormcases. Where large trees abound the leaves are falling fast, and will cause gardens to bear a very untidy appearance for some time to come. Collect the leaves as they fall, and stack them in a heap to mix with manure in the early spring. Sweep lawns frequently and roll them occasionally. Where alterations of any kind are contemplated they should be commenced at once. It often happens that in amateurs' gardens of recent formation many alterations require to be made annually. Inequalities are noticeable on newly laid lawns, or the shrubs in the borders have grown so rapidly as to become crowded and thereby injure each other. The present is a good time for giving attention to these points, which if neglected will soon give a desolate appearance to any garden. Lawns should be smooth, and every plant in the borders should stand free and boldly from each other. Drains that have become defective should be taken up and relaid. All these matters form suitable work for the present time.

**ROSES.**—Planting and transplanting will now be the chief employment, but it is necessary to complete alterations as early as possible; and if a good dressing of partly decayed manure can be spread over the surface, the rains will not only wash the nutriment down to the roots but the drier portion forms a protection to the roots during severe weather. It is unnecessary to give a selection of varieties suitable for suburban gardens, they are so often given in the pages of the Journal, for most of the varieties selected for exhibition are also suitable for a home display. The Briar stock is the best to plant on heavy retentive soils, while the Manetti will flourish best on lighter soils. Do not plant Briars any deeper than they have been growing before, but plant the Manettis deep enough for the union between the bud and stock to be placed underneath the soil. Cuttings of Roses taken off and inserted in a warm border now will strike readily, but the operation must not be delayed.

**KITCHEN GARDEN.**—Asparagus stems are now turning yellow and should be removed, and a winter dressing about 8 inches in depth of well-decayed manure spread over the surface. If the alleys contain plenty of soil a slight covering may be spread over the dump, but it is not a good practice to take them out too deep, or the roots from the plants growing nearest the sides become exposed. If it is intended to make new beds no better time than the present can be chosen for trenching the ground. It will then be exposed to the influence of the atmosphere during winter, and will be in fine condition next April. Cucumbers in frames are now over, and it will be well to clear the haulm away, rake the surface, and place a number of Lettuce and Endive plants lifted with good balls within for protection. Clear away all haulm of Scarlet Runners, &c.; place the stakes in bundles either for burning as firewood or to serve as stakes next year.

Chrysanthemums opening their flower buds should have a plentiful supply of water and careful attention by giving air. On all bright days ventilate freely. Keep the greenhouse cool, dry, and clean, and let any watering be done in the morning. Attend to Calceolarias, Cinerarias, and Primulas, and keep green fly in check. The night temperature of greenhouses where Azaleas, Camellias, &c., are kept should be about 40°, but warmer structures for stove plants about 60°, allowing it to rise higher by day with sun heat. Clerodendrons, Bougainvilleas, and Allamandas intended as specimen plants should be allowed to rest in the warmest corner of the stove. Hyacinths and other bulbs may still be potted, but the

sooner such work is done the better, as the bulbs will shortly commence growing.

## WORK FOR THE WEEK.

### KITCHEN GARDEN.

**COMPLETE** the earthing-up of Celery, but the late crops which are yet growing freely may have the final earthing deferred for a time. Late Turnips should be examined, and those fit for use may be taken up and stored in moist sand. On dry days take up Cauliflowers with well-formed heads, and place them in a pit or other sheltered situation. Veitch's Autumn Giant is the best variety for late use, as it is not so liable to suffer from damp as others, whilst the quality is excellent. Taking up root crops such as Carrots, Beet, Salsify, &c., should be proceeded with and completed as soon as possible. Parsnips also may be taken up, but if the ground they occupy is not required for other purposes they may remain some time longer. Lettuces and Endive in frames, &c., should have abundance of air on all favourable occasions. Dusting with quicklime, dry wood ashes, or soot will occasionally be necessary for young Lettuce and Cauliflower plants to protect them from the ravages of slugs. When the haulm of Asparagus is yellow it should be removed, and give the beds a sprinkling of salt, and dress them with well-decomposed dung, afterwards surfacing with soil from the alleys. The decayed leaves of Seakale may also be removed and the crowns covered with a little sawdust, spent tan, or ashes. When Seakale is grown extensively for forcing it is better to take up the roots so soon as the foliage is matured and lay them in a sheltered position. Peas may now be sown in any warm sheltered situation; First and Best is still one of the finest early Peas, and William I. is also good. For sowing at the base of walls with a southern aspect Extra Early Premium, Blue Peter, and Little Gem are very productive and early varieties. Broad Beans may also be sown in a sheltered situation; Early Mangan is the hardiest, but that is its only recommendation, Early Long-pod being much superior, and Beck's Gem from its dwarfness is suitable for sowing on warm borders to afford an early supply.

**Forcing Department.**—A few roots of Rhubarb should now be placed in the Mushroom house or other house having a temperature of 55° to 65°, placing them in rich moist soil, but not watering until growth commences, and then with tepid liquid manure; Johnstone's St. Martin is the best for forcing. Forcing Seakale may also be commenced, selecting strong roots with bold well-ripened crowns, placing them in moist rich soil, and not watering until growth commences. It is necessary that the Seakale be placed in the Mushroom or other warm house, and means must be employed to exclude light to ensure the blanching of the growth. An early bed of Asparagus may be planted, there being nothing better for the purpose than a bed of dung and leaves placed in a pit heated by hot-water pipes so as to admit of air being given. Unless the demand be urgent very early forcing of this esteemed vegetable is not advisable. Dwarf Kidney Beans must be kept near to the glass and well supplied with water and liquid manure after they come into flower. To grow these Beans well in winter they require as the days become shorter more heat than in early autumn and spring; 60° to 65° at night is not too much, and 70° to 75° by day. Make successional sowings as required to ensure a continuous supply.

### FRUIT HOUSES.

**Figs.**—Trees in pots intended for early forcing should, if they have been placed in the open air, be taken under cover to protect them from the cold autumn rains. It is presumed that the trees have been top-dressed, repotted, or had the drainage rectified, as advised in a former calendar. The trees should be placed in a rather dry well-ventilated house. Any thinning or shortening crowded attenuated growths should be attended to, and the trees dressed with an insecticide—8 ozs. of nicotine soap in a gallon of water is suitable, or 1 lb. of soft soap in a gallon of water, adding flowers of sulphur; apply the dressing with a brush. A dish of forced Figs early in the season is now considered a necessity in large establishments, and is not by any means difficult to obtain. A light well-ventilated house is necessary, having pits containing fermenting materials to afford bottom heat to stimulate the roots and afford a constant supply of nutritive matter. The Fig requires abundance of liquid manure when growing, the trees being most prolific under limited root space. One of the great advantages of Fig culture in pots is the number of varieties that may be grown in a house of moderate dimensions, and which if forced early come in at a time when the dessert is not over-varied. Brown Turkey and White Marseilles are excellent in every respect, they, with the following, being well suited for forcing and pot-culture:—Osborn's Prolific, Early Violet, Black Ischia, Brown Ischia, Black Provence (Black Marseilles), Violette de Bordeaux, Negro Largo, Angelique, White Ischia, Col di Signora Bianca, and Royal Vineyard.

**Peaches and Nectarines.**—Admit all the air practicable to trees in houses; indeed, with portable roofs the lights may with advantage be removed so as to admit the autumn rains, and more thoroughly to induce rest, besides cleansing and invigorating the trees. This



exposure, though not so necessary with midseason and late houses, is of great advantage to the trees. Root-pruning and lifting in the succession and late houses should be proceeded with as the wood becomes ripened. As a rule all trees may safely be commenced with as soon as the leaves part freely from the shoots. Young trees are more difficult to deal with than those that are aged, but to check their luxuriance a trench may be taken out at such a distance from the stem as will shorten the strongest roots. This will also be an advisable plan to pursue with trees in late unheated houses. The trenches need not be filled in again for a fortnight, which will cause the trees to fill the space undisturbed with fresh rootlets. At the same time remove all growths not required for the extension of the trees. The trees in the early house from which ripe fruit is to be gathered in May must without further delay have the final pruning, and dress the old and young wood with an insecticide, replacing the lights, painting the woodwork and trellis if necessary, and tying the trees to the trellis, covering the outside border with some protective material so as to prevent the soil from being too much saturated and cooled by the autumn rains. Admit air freely day and night, as a close atmosphere when the trees should have rest is more provocative of the buds dropping than is considered to be the case. From the fall of the leaf to closing the house the rest should be as complete as possible.

**Cucumbers.**—The autumn-fruiting plants are now in good bearing. Maintain a night temperature of 70° to 75° by day, and 80° to 85° from sun heat. Admit a little air at the upper part of the house on every favourable occasion, but not sufficient to lower the temperature. In the case of bright cold days it is better to partially turn off the heat for a few hours than to ventilate too freely. Sudden fluctuations of temperature should be avoided, and the water should be of the same temperature as the house before applying it to the roots. Syringe the foliage only during bright afternoons, but keep the evaporation troughs filled. Damp the paths, walls, &c., morning and afternoon in warm clear weather. Allow the winter-fruiting plants to advance well up the trellis before stopping, and afterwards train the shoots to the right and left of the stem. Remove all tendrils and male blossoms as fast as they appear, adding a little fresh soil, which has been previously warmed, as fast as the roots cover the surface of the bed.

**Pines.**—Continue the course of treatment advised in our last calendar. Examine the fruiting plants occasionally and remove all superfluous suckers, retaining only the best one on each plant. In the case of successional plants remove all suckers that appear before the fruit is visible, excepting, of course, it is desired to increase the stock. In most establishments the young stock is grown in fermenting beds until the plants are in a proper state for fruiting, which is very suitable; but fruiting plants are more satisfactorily treated by having hot-water pipes to supply the needful heat to the roots. In the case of fermenting beds it is usual to replenish or make new beds as may be necessary at this time of year. Tan is by far the best material, as it is more durable than any other, and the best substitute for it is Oak or Beech leaves, which should be collected in a dry state, and when the bed is made it should be firmly pressed; but tan, on the other hand, should be placed lightly together.

#### PLANT HOUSES.

**Orchids.**—*Aërides*, *Vandas*, *Saccolabiums*, *Phalænopsis*, and similar plants will be in a state of partial rest, and will only require sufficient water at the roots to keep the moss damp, but if allowed to become too dry the bottom leaves shrivel and fall. Premature growth should be prevented by keeping the atmosphere of the house comparatively cool and dry. A little water should be poured on the paths in the morning. Air should be admitted through the bottom ventilators, but very little will be required. Most *Dendrobiums* will now be at rest; they require to be kept cool and dry. *Cattleyas* require a long season of rest to enable them to make vigorous growth in the spring, and should be kept rather dry, the pseudobulbs not being allowed to shrivel; but very little water is now required to keep them plump. *Cattleya Warscewiczii* will make a grand display of flower during the winter months. A light position should be given and drip avoided, otherwise the buds decay. *Cypripediums* do not require any rest; water must be given them liberally at all seasons. *Calanthe vestita* coming into flower should have very moderate supplies of water, and should be kept in the driest part of the house fully exposed to light. *Lycaste Skinneri* though a water-loving plant requires less at this season; but the roots must not be allowed to become too dry or the pseudobulbs shrivel, and unless they are well elevated so as to allow the water to pass away freely from their base the flower buds decay when they are about an inch in length. Many *Odontoglossums* and *Masdevallias* still growing freely must be kept moist at the roots; but although these plants require plenty of water care must be taken at this season not to have a saturated atmosphere. *O. nævium* and *O. Phalænopsis* require a little more warmth at this season, and should be placed at the warmest end, or in the Mexican house.

**Stove.**—*Gardenias* that are well set with flower buds may be placed in a higher temperature—70° to 75°, when they will come into flower in a few weeks and be very acceptable. *Taberna-*

*montana coronaria flore-pleno* is even more beautiful than a *Gardenia*, and may be similarly treated. *Eucharises* having completed their growth and rested for about six weeks should be returned to heat, and if placed in bottom heat of 85° to 90° they will throw up the scapes more freely. All winter-flowering plants should have light positions and be near to the glass, supplying any plants in small pots with liquid manure once or twice a week. During the winter season there is a great demand for plants of moderate size for decorative purposes, and plants with finely coloured leaves are useful now. *Crotons*, *Dracænas*, *Acalyphas*, &c., are very distinct and may be had in character in pots of moderate size, or in stately specimens; and many small-growing, fine-leaved plants, such as *Bertolonias*, *Fittonias*, *Peperomias*, *Sonerilas*, and *Tillandsias*, which occupy little space, and are very effective for margins, &c., easily propagated and grown. Be somewhat sparing of moisture in this structure, but maintain a moderate degree of humidity where there are growing plants, with free circulation of air when the external air is mild, and a temperature of 60° to 65° at night and 70° to 75° by day will be sufficient for most stove plants at this season. Gradually withhold water from such plants as *Allamandas*, keeping them in the coolest, driest and most airy part of the house, affording evergreens at rest no more water than is sufficient to maintain the foliage in good condition.

**Greenhouse.**—Herbaceous *Calceolarias* will now require potting off singly; 8-inch pots will be large enough for the first shift, employing turfy loam well reduced with a fourth part of leaf soil and well-decayed manure, with about a sixth of sand. If there is any trace of aphides dip the plants in tobacco water prior to potting. Place them in a pit, and if kept cool (frost only excluded) and moist all the better. Move the second batch of *Cinerarias* into the pots in which they will flower, and keep them near to the glass. *Chrysanthemums* should be protected from frost, but there must not be any attempt at keeping them close; they cannot have too much air and light, but frost must be excluded.

#### TRADE CATALOGUES RECEIVED.

James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea.—*Catalogues of Fruit Trees, Roses, Hardy Trees and Shrubs. American Plants, &c.*

Joseph Bramham, 104, Dale Street, Liverpool.—*Illustrated Catalogue of Boilers, Wirework, &c.*

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Roses, Fruit Trees, and Conifers.*

John Standish & Co., Ascot.—*Catalogue of New and Rare Plants.*

Francis and Arthur Dickson & Sons, Chester.—*Catalogue of Select Roses.*

Stuart, Mein, & Allan, Kelso, N.B.—*Catalogue of Ornamental Trees and Shrubs.*

Alexander Dickson & Sons, Newtownards, Co. Down.—*Catalogue of Roses.*

William Knight, Hailsham, Sussex.—*General Catalogue of Nursery Stock.*

Otto Putz, 50, Great Russell Street, London.—*List of Gomphrenas, &c.*

Wallem & Legrand, Ghent, Belgium.—*Catalogue of Ferns, &c.*

#### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

**SEEDLING GLOXINIAS (*E. Molyneux*).**—The varieties are excellent, the flowers being large, of great substance, and the colours varied. The dark flowers are very rich, and the lights clear and attractively marked.

**REMOVING TREES (*L. L.*).**—Although the young trees have not shed their leaves they will move safely if you cut off all the foliage and keep the roots moist during transit. It is better for the foliage to wither in a natural manner, but as you cannot wait for that you may adopt the course suggested rather than "leave the trees behind." By cutting off the leaves now they are so nearly matured you will not seriously, if at all, weaken the trees, and you will remove the evaporating surfaces and prevent the wood shrivelling.

**VINES FOR MIXED HOUSE (*J. M. A.*).**—Your house will accommodate seven Vines. If you want as many varieties you may plant Black Hamburgh, Foster's Seedling, Madresfield Court, Alicante, Muscat of Alexandria, Lady Downe's, and Trebbiano—that is, assuming the house is sufficiently heated for all these varieties. A more useful mode of occupying the house would be to plant two Vines of Muscat of Alexandria at the warmest end, three of Black Hamburgh, one of Foster's Seedling, and one of Madresfield Court. Three good Peaches for your house are Rivers' Early York, Grosse Mignonne, and Barrington, which ripen in succession. If you desire a Nectarine you may plant Lord Napier. Very few plants succeed on the back wall of a viney when the roof is covered with foliage. Camellias will do so, but they grow rather slowly, and should not be planted until the wall is partially shaded with the Vines. *Hoya carnea* grows and flowers well in the shade.

**VINES IN POTS (*Park Hill*).**—It is not necessary to repot the Vines now growing in 12-inch pots, but previously to placing them in heat you may remove a portion of the old soil carefully, not seriously disturbing the roots, and apply some fresh and richer compost, pressing it firmly; and as the Vines advance in growth you may further mulch with rich manure. See that the drainage is right. Some good growers plunge the pots in leaves



when starting the Vines, bending the canes over the pots' sides and pegging them down into rich turfy soil and manure previously to training them up the rafters, and so obtain a "double set" of roots. We have seen excellent crops of Grapes follow that mode of treatment.

**WINTERING COLEUSES (Idem).**—Plants when much pruned at this late period of the year not unfrequently damp considerably—that is, the branches below the point of severance commence decaying, especially if the temperature is rather low. If you have a warm light stove in which you can winter the plants you may prune them moderately, otherwise you had better let them alone.

**PRIMULAS UNHEALTHY (Subscriber, Cheshire).**—The old plants to which you allude were to a considerable extent exhausted by flowering and, perhaps, seeding in the spring, hence the yellowness of their foliage now. If the roots are active you may improve the colour of the leaves by occasionally watering the plants with rather weak and quite clear soot water, and placing them in a house where the night temperature is not lower than 45°.

**TACSONIA NOT FLOWERING (Idem).**—The Tacsonia does not flower because its growths, being shaded by the Vines, are not matured. Your only chance of obtaining flowers is to train the growths thinly during the growing season so that the foliage can have all the light possible, and even then you cannot expect the plant to flower freely, as the position is unsuitable.

**RENEWING VINE BORDER (Old Sub).**—If you remove the soil as you propose the Grapes hanging on the Vines will shrivel. If the Grapes are quite ripe and you have a dry and moderately cool room at your disposal you can cut the fruit, securing a portion of the laterals for insertion in bottles of water—ordinary wine bottles will do; and the bunches may be preserved as well suspended in the room as hanging on the Vines. They should be cut when the foliage is changing, removing it from the laterals when they are placed in bottles. The border can then be renewed at once as you propose, placing the roots within 6 inches of the surface. If you cannot bottle the Grapes you must not renew the borders until the crop is cut in the ordinary manner. In addition to the bones add some wood ashes to the compost, but not much manure unless the loam is poor, as manure is best applied as surface dressings. Without such applications to inside borders, and watering them sufficiently yet judiciously, the roots will pass into the outside borders. You are quite right in endeavouring to encourage roots in the inside of the house, but make the outside border good also.

**POTTING FRUIT TREES (Idem).**—If you can preserve the foliage fresh by placing the trees in a shady position for a time, syringing occasionally if the weather is dry, you may pot them now, and root-action will commence at once; but if you cannot keep the foliage fresh you will gain nothing, but rather lose by digging up and potting the trees until most of the leaves have fallen. Your safest plan probably will be to let the trees remain where they are until the leaves change and commence falling rather freely when the trees are shaken. By removing trees prematurely the wood not unfrequently shrivels, and shrivelling is not maturation.

**GARDENER'S SALARY (Horse).**—You do not say that you provide a house in addition to the wages you give to the gardener, whom you state is a very good one and suits you so well. A really skilled, intelligent, and trustworthy gardener should have a house, or an equivalent, in addition to the wages you name, which do not exceed the earnings of many mechanics' labourers in London and other towns. There is no "usual rate" of gardeners' wages; some employers obtain the services of men at the lowest possible cost, others are disposed to make able and worthy men really comfortable, and the latter class—to which you belong—are usually the best served.

**WINTERING BEDDING PELARGONIUMS (A Constant Subscriber, Liverpool).**—You cannot winter the young plants recently struck from cuttings in a spare room unless they are placed close to a light window and the room is frost-proof during severe weather, but you may perhaps succeed in preserving a portion of the old plants. Remove all the leaves from them now, except those that do not much exceed an inch in diameter at the ends of the shoots. Keep the soil in the pots perceptibly moist, so as to preserve the roots fresh, yet be careful not to over-water. When you do apply water give sufficient to penetrate the entire mass of soil; nothing is more fatal to success than mere sprinklings, rendering the surface of the soil moist while it is as dry as dust below. A warm cellar is very unsuitable for plants that have been cut down, as it promotes fresh growth too soon, and unless this fresh growth can have light it inevitably perishes. A dry frame placed in a very sheltered position would preserve the young plants until the approach of severe frost, keeping them dry, then remove them to your greenhouse if completed, or to the windows of your dwelling. Plants in leaf must have light; those having no leaves may be kept in a semi-dark place for a time until they commence growing. You may remove the leaves from old plants taken from the beds, but not from plants recently struck from cuttings.

**RUSHES FOR SECURING ROSE BUDS (T. B., Barkly Hall).**—"D., Deal," states that a letter addressed to M. J. Margottin fils., Bourg-la-Reine, Paris, would probably enable you to procure some of the rushes to which you refer, as M. Margottin offered to obtain some for a gentleman who was visiting the nurseries with "D., Deal."

**STEPHANOTIS LEAVES FALLING (Cranfordian).**—It is not unusual for some of the leaves to turn yellow and drop off at this period of the year, but the defoliation of your plant is excessive. It has received a check of some kind, and as the temperature is right the evil must be sought at the roots. Probably the soil at the bottom of the box over the hot-water pipes has been allowed to become dry at some time or other. All you can do now is to give sufficient water to keep the roots healthy during the winter, and in the spring remove a portion of the old soil and apply some fresh compost—turky loam and peat with charcoal freely intermixed—to induce fresh and healthy root-action; then by increased temperature and syringing the plant may push fresh growths. The more upright these are trained the more rapidly they grow; but a healthy plant usually grows freely enough when trained, across the rafters.

**DESTROYING AMERICAN BLIGHT (C. H. P.).**—Paraffin oil is efficacious, and if judiciously applied is not injurious to the trees. It should be applied with a brush to the parts affected, taking care that it does not run down the stem to the roots, and is not allowed to touch the foliage and young shoots. If employed over the foliage a wine-glassful to four gallons of water is sufficient.

**SOWING CYCLAMEN SEED (Curate).**—Provided you can command heat, say a temperature of 55° to 65° by artificial means, the seed may be sown now, placing the pots or pans near to the glass. If you have only the convenience of a greenhouse do not sow the seed until February or early March,

placing the pans in a hotbed, and grow the young plants in a frame during the summer.

**RAISING SOLANUMS FROM SEED (Idem).**—Sow the seed early in March, placing the pans in a hotbed, and when the plants are large enough to handle pot them off singly in 3-inch pots, returning them to the hotbed until established, when they may be gradually hardened-off and grown-on during the summer in a cold frame, shifting the plants into larger pots as they require it. In September they may be removed to the greenhouse, assigning them light airy positions near the glass. Plants from seed do not produce berries well the first season, but improve with age. We cannot advise on the other question.

**DRESSING A LAWN WITH GAS LIME (B. T. J.).**—Although you state the quantity of soil to be mixed with the gas lime, you give no data as to the quantity you propose to apply to a given area. Of a compost formed of "one part gas lime to three parts of soil," eighty bushels will be sufficient for one acre if it is thoroughly incorporated with the soil, and as evenly distributed over the surface as possible. It should be applied now, as the moss is most active; or if you value the appearance of the lawn during the winter, as the lime will in all probability render the grass brown more or less, the dressing may be deferred until February or early March. A stronger application of gas lime would be more certain of killing the moss, but would have a decidedly injurious effect on the grass and is not advisable. The light dressing above named—viz., twenty bushels of the lime per acre, may be applied to the kitchen garden now and dug in, but it must be kept from fruit trees. Gas lime is a good application to ground long under crops, as it destroys predatory vermin, and is one of the best preventives of "club root." It should be used in its fresh state, and dug-in in the autumn, as after long exposure to the action of air and water the hydrosulphuret of lime is converted into sulphate of lime or gypsum, which in itself is a valuable manure for grass; but the value of the gas lime as a destroyer of insect life is dependant on the sulphuret of lime, hence the necessity of its application in small quantity so as not to injuriously affect vegetation as an overdose would do for a lengthened period.

**AMERICAN BLIGHT (Mr. Fenton).**—The best treatment of Apple trees attacked by American blight is to apply paraffin to the parts affected, not touching the smooth clean portion of the bark with the solution. We cannot tell you about the incubators.

**PEARS AND APPLES FOR SOUTH-EAST ASPECT (C. L.).**—Pears: Jargonelle, Williams' Bon Chrétien, Beurré d'Amanlis, Louise Bonne de Jersey, Marie Louise, Durondeau, Beurré Diel, and Glou Morceau. Desert Apples: Worcester Pearmain, King of the Pippins, Cox's Orange Pippin, Welford Park Nonpareil, Gravenstein, Reinette de Canada, Dutch Mignonne, and Sturmer Pippin.

**PERENNIALS FOR EXPOSED SITUATIONS (A. R.).**—*Achillea aurea*, *Ajuga orientalis*, *Allium ciliatum*, *A. grandiflorum*, *A. Moly*, *Alyssum saxatile compactum*, *Anemone apennina*, *A. japonica alba*, *Aquilegia chrysantha*, *A. vulgaris alba*, *Arabis alba*, *Armeria maritima alba*, *Aronicum glaciale*, *Aster Amellus majus*, *A. longifolius formosus*, *Aubrietia grandiflora*, *Betonica grandiflora*, *Calochortus luteus ocellatus*, *Caltha palustris flore-pleno*, *Campanula aggregata*, *C. Hendersoni*, *C. ranunculoides*, *Convallaria majalis*, *Coreopsis auriculata*, *Delphinium Belladonna*, *D. nudicaule*, *D. alopecuroides*, *Dianthus floribundus*, *D. neglectus*, *D. pungens*, *Dielytra spectabilis*, *Doronicum Clusi*, *Dodecatheon integrifolium*, *D. Meadia* and var. *album*, *Epilobium latifolium*, *Epimedium pinnatum elegans*, *Erigeron macranthus*, *Fuchsia corallina*, *Gentiana acaulis*, *Geum coccineum flore-pleno*, *Helianthus multiflorus plenus*, *Helleborus niger maximus*, *H. orientalis*, *H. atrorubens*, *Hemerocallis flava*, *Hemerocallis angulosa*, *H. triloba* var., *Hyacinthus amethystinus*, *H. candicans*, *Hypericum calycinum*, *Iberis corifolia*, *Iris germanica* var., *Jasione glutinosa*, *Lilium candidum*, *L. chalcedonicum*, *L. tigrinum splendens*, *Lychnis chalcedonica plena*, *Meconopsis cambrica*, *Myosotis distitiflora*, *Narcissus Ajax*, *N. incomparabilis* var., *N. poeticus plenus*, *Nepeta Mussini*, *Oenothera macrocarpa*, *Paeonia albiflora* var., *P. officinalis* var., *Papaver nudicaule*, *Phlox verna*, *Primula acaulis* var., *P. auricula* var., *P. cortusoides*, *P. denticulata*, *Pulmonaria azurea*, *Ranunculus amplexicaulis*, *Saxifraga granulata* fl.-pl., *S. longifolia*, *Schizostylis coccinea*, *Scilla siberica*, *Sedum spectabile*, *Senecio pulcher*, *Sisyrinchium grandiflorum*, *Solidago Virgaurea*, *S. cambrica*, *Spiraea Aruncus*, *S. Filipendula plena*, *S. japonica*, *S. venusta*, *Spalmata*, *Statice latifolia*, *Trollius europeus*, *T. napellifolius*, *Veronica prostrata*, *V. amethystinus*, *Viola cuneolata*, *Tritoma Uvaria glaucescens*, *Thalictrum anemonoides*, *Stenactis speciosa*, *Polygonum Brunonis*, and *Delphinium Keteleeri*.

**FRUIT TREES FOR WALL (Idem).**—You do not say whether your wall running S.E. to N.W. will have both sides or only one available for the trees. The south-west aspect will be suitable for Plums and Pears, the former requiring to be lifted every three or four years so as to keep them fruitful. The Pears should be on the Quince stock, and be planted 6 feet apart, and the Plums 20 feet. Plums.—July Green Gage, Green Gage, Kirke's, and Jefferson. Pears.—Jargonelle, Williams' Bon Chrétien, Louise Bonne de Jersey, Hacon's Incomparable, Marie Louise, Doyenné du Comice, and Beurré Diel. The north-east aspect would answer for Cherries—Early Jaboulay, Belle d'Orléans, May Duke, and Black Tartarian, with Morellos; also Apples—Devonshire Quarrenden, Ravelston Pippin, Kerry Pippin, Cockle's Pippin, Dutch Mignonne, and Sturmer Pippin. The Cherries should be on the Mahaleb, and the Apples on the Doucin stock, and planted 6 feet apart. We should have one each of the Cherries, one each of the two first-named Apples, and two each of the others.

**PARAFFIN STOVE v. HOT-WATER PIPES (Ellenack).**—To exclude frost from your conservatory with a paraffin stove would be more costly than heating with hot water, and is not so desirable. You would find the cost for fuel less if you increased the quantity of piping, and the temperature would be more healthy and agreeable, as the pipes would not need to be heated so much as they are now.

**BOX TREES DISEASED (Mr. F.).**—The spray sent has the appearance of having been cut by hailstones, though it may be due to the unusual wet season. The remedy is, of course, more favourable weather. A dressing of leaf soil or thoroughly reduced vegetable refuse applied as a top-dressing over the roots would be advantageous in promoting more vigorous growth.

**CONCENTRATED MANURE (J. Shepherd).**—Not having seen the Manchester manure advertised we are unable to inform you where it can be obtained.

**ROSES FOR EXPOSED POSITION (E. T. H.).**—Gloire de Dijon, John Hopper, Jules Margottin, Souvenir de la Malmaison, Général Jacqueminot, Sénateur Vaisse, Madame Victor Verdier, Prince Camille de Rohan, Madame

Clemence Joigneaux, Marguerite de St. Amand, Comtesse d'Oxford, Marquise de Castellane, and Boule de Neige.

**ROSES FOR HEDGE** (*Flora Bayley*).—If the situation is very much exposed we fear the Roses will not succeed well. Your best plan will be to have a stout galvanised wire fence and cover it with climbers. Indeed, as you require evergreen Roses, you must have climbers such as *Félicité Perpetue*, *Flora*, *Leopoldine d'Orléans*, *Bennett's Seedling*, *Dundee Rambler*, and *Splendens*. The ground should be dug deeply and be enriched with manure previously to planting the Roses. The Sweet Briar is hardy and makes an agreeable hedge.

**ROSES UNDER GLASS** (*A Lover of Rose Shows*).—You may train the climbers down the roof if you wish to do so, but you cannot grow Roses in pots under a shaded roof. Until you have had more experience in growing Roses under glass we cannot advise you to attempt such early forcing as you appear to desire. First have your plants well established, only forcing slightly the first year. A good fire along the front of the house and across one end will afford sufficient heat for the Roses; but we doubt if you will have a supply of flowers such as you appear to anticipate during the month of March. Proper furnace doors and fittings can be had from ironmongers, their cost varies. Mr. William Paul of Waltham Cross has published a small work on Roses in pots, but we do not know the price of it. A pamphlet on Tea Roses has also been published by Mr. Ecroyde Claxton, Wavertree, Liverpool.

**IXIAS AND SPARAXIS** (*M. A.*).—These are half-hardy bulbs from the Cape of Good Hope. The true *Ixia* are known from *Sparaxis* by not having, like it, a jagged sheath; from *Babiana*, in having a dry seed-pod instead of a berry; and from *Tritonia*, by having the stamens inserted at the bottom of the petals instead of in the tube of the flower. They will grow in rough peat; the strong ones require very little sand, and the smaller ones want one-third sand in the compost. They succeed well in a warm border if sheltered from hard frosts and not allowed to get dry when they are in growth. When done flowering they may be kept in or out of the pots, after the leaves are withered, without any water, until fresh growth commences. They may be potted now, and should then be placed in a cold pit and protected from frost and cold heavy rains, and taken to the greenhouse or window after roots are plentifully formed. Many will do very well if planted in sandy soil and leaf mould, about 4 inches deep, in a dry raised border, and protected there from severe frost and heavy rains by litter, and any material that will throw off the water. *Triteleia* are quite hardy and will grow well in ordinary garden soil. Plant them at once. The *Sparaxis arifolia* will grow well in the position you name.

**NAMES OF FRUITS** (*T. G.*).—The Plum is Jefferson. (*Connaught Subscriber*).—The Pear is Flemish Beauty. (*P. Q.*).—No. 1 Pear is Beurre Châtaignier; 2 we do not recognise. The Apple is, we think, Cox's Orange Pippin, but it is too hard and green for it to be named with certainty. (*J. D.*).—No one can name Pears so hard and imperfect; besides, you have greatly exceeded the number of specimens that we undertake to name. Our stipulation is that not more than six fruits be sent at one time, and when many more are sent delay must occur in publishing their names, even if they are named at all. (*J. Macbratney*).—Belle Agathe. It is a peculiarity of this Cherry that birds never attack it. It ought to be about a third larger than those you have sent.

**NAMES OF PLANTS** (*K.*).—It is a pretty semi-double form of *Chrysanthemum coronarium*. (*P. M.*).—*Coronilla Emerus*. (*S. C. O.*).—*Pernettya mucronata*. (*R. C. R.*).—The large leaf is that of *Aralia Sieboldii*. We cannot name the other plant without flowers; we do not think it is *Gnidia simplex*. (*G. W. A.*).—1 resembles *Adiantum concinnum latum*; 2, *Pteris tricolor*; 3, *P. cretica albo-lineata*; 4, *P. serrulata cristata*; 5, *P. serrulata*; 6, *P. serrulata variegata*. (*R. P. W.*).—The specimens sent did not show the characters sufficiently to be identified, owing to the flowers being gummed on to the paper. If you could send several flowers of each in a small box we will endeavour to ascertain what they are. They appear to be *Helianthemum* and not *Cistus*. (*South Devon*).—The flowering spray is *Lycocasteria formosa*, the variegated plant *Abutilon Thompsoni*. We cannot name the other spray without flowers. (*Mr. Neill*).—It is the Snowdrop Tree, *Halesia tetrapetala*, a native of North America. The specific name signifies four-winged, and refers to the fruit. (*M. J.*).—1, A stunted form of *Pinus Strobus*; 2, *Abies excelsa* *Cianbrasiliana*.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### BREAKING-UP INFERIOR GRASS LANDS.

(Continued from page 334.)

In continuing our subject we wish to say we omitted to state in our last illustration, that before all the turf could be burnt heavy rains set in and prevented the completion of the work upon one corner of the field for a month or six weeks, in consequence of which we could not plough the land. Where the land was cleared of turf the roots of the grass left in the land started again and made a thick mat of grass as before, and as we thought of a better and finer description than previously prevailed, and no doubt if we had given it a heavy dressing of ashes that the turf would have been much superior and more productive than it ever had been before. Our object in naming this circumstance is, that in those cases in pastures and park lands where some parts bear only rough coarse grass, that the method of paring the turf, burning and spreading the ashes, and if necessary some seeds sown for renovating the herbage, may with advantage be carried out without ploughing. Where the coarse turf only occurs in patches it would be very inconvenient if cultivated and cropped, inasmuch as it would

require to be fenced against cattle for the time. In the case, however, of paring and burning alone it would be for a short period only, and not interfere but slightly with feeding and other arrangements connected with the usage of the pasture. There are various causes which operate to produce these poor and brown patches on the pastures which are sure to be altered by paring and burning, especially when insects are the cause of it. For instance, the rook worm, as it is called, is a large grub which often breeds in certain patches, and the rooks rout up the turf to get at them, and thus leave the land bare and brown with decaying grass roots, &c. In some cases ants prevail to a great extent, which cast up their hills and prove a great impediment in cutting grass for hay. These or any other causes which make pastures uneven in appearance can best be altered and improved by paring and burning the turf, and with but slight and temporary disturbance to the ordinary management of the park or pasture lands.

When the whole of a pasture, or a large portion of it which can be easily fenced off and brought under separate management, it may often be wonderfully improved by breaking up, as our next illustration will show. We had a very convenient and useful pasture near our residence with fine timber upon it, and certainly it was a very ornamental piece of grass land, except about 8 acres on the far side, which only produced an inferior class of herbage. We were quite aware of the cause of this, but for some years we hesitated to break it up, but after treating the pasture liberally with manure and compost we found it of little avail. We therefore determined to break it up, in order that we might drain it and chalk it, so that after cultivating and cropping for a few years we might lay it down to grass again, and thus have the whole pasture of the like quality and appearance. The soil was a strong clay at bottom but with a strong loam on the surface; therefore, instead of paring and burning as we had previously done with the breast plough propelled by men, we use the common plough with two horses, and cut the turf with the broad paring share attached. Instead of cutting the turf about an inch in depth as it is usually done by the men in "burn baking," we did not hesitate to cut the turf from 2 to 3 inches in depth, in order that we might be sure to destroy any insects in the land. At the same time this system furnished not only ashes enough to use on the land when broken up, but also gave us a good supply for use upon the farm in cultivating for root crops, which we thought would in some measure compensate us for the expenses of breaking up.

We undertook to plough up the turf and employed our usual gang of men to burn the turf at so much per acre, because such work is always best done by men who are accustomed to the system of stife burning, and at the same time prevent any disturbance of the ordinary labour going on upon the farm. We fortunately had a fine dry time for burning the turf, and the quantity of the ashes produced was enormous; so much so that the third part only was used on the land the first year and fallowed in, another third part was stored and thatched in heaps at one end of the field for use the second year, the remainder was carted away and stored for use, and proved quite sufficient for drilling with our root seeds for several years. As we had to drain and chalk the land we kept it in fallow for the first year, in order also to thoroughly mix the soils by cultivation; in the autumn we sowed wheat and had a splendid crop, succeeded by stubble turnips which were fed off by sheep eating cake, &c. In the spring after spreading the ashes we had in heaps, we sowed April bearded wheat, because barley would be sure to be overstrawed, and this crop of wheat proved about the largest crop we had ever seen. It was cut early and stubble turnips again sown and fed off as before, and then sown with black Tartarian oats; these were as stout a crop as could be grown. After this we prepared to lay the land into grass, and seeded it in the spring on a fallow surface, using a mixture of permanent meadow grasses and clovers such as we have recommended and intend to describe in an article upon the subject in this Journal at a future time, as adapted for various soils. The first summer after the grasses became strong enough to bear feeding with cattle the dairy cows were allowed to run upon it, but not the sheep, for unlike cattle they bite too closely and injure the young grass, and until the grasses were firmly and permanently established sheep were not placed on the pasture. It is now twenty-five years ago that this pasture was relaid, and it has proved to this day superior to the old pasture which was never broken up, and all our objects and expectations, whether of improvement in letting value or ornamental appearance, have been fully realised.

We have given these illustrations for the purpose of teaching the home farmer how to avoid mistakes on the one hand, and how to take advantage of circumstances in his favour on the other. We, however, by no means advocate an indiscriminate breaking-up of inferior grass land, or indeed any grass land, because there are various matters to be considered before it should be resorted to, such as whether the land is intended to be converted into arable land in the future or relaid into permanent pasture. As a rule we can seldom justify the breaking-up of rich productive pastures, and where an occupier has been permitted to do so it is very seldom that it has ever returned to good pasture

as before, although when corn was dear it might have been a profitable transaction for a time. Almost all soils will pay for breaking up and burning the turf except sand and gravel. It is especially difficult to burn the turf of sandy land, for as soon as the vegetable matters become burnt the sand alone sinks down into a mass and puts the fire out by the exclusion of air, and a similar thing to some extent occurs in the case of gravelly soils. All inferior pastures will not pay for breaking up and converting into arable, especially on thin chalk soils; for such land, although furnishing only a scanty herbage, will by feeding with sheep keep them healthy, and by folding on the arable land at night time manure the outlying land at but little cost. We have, however, one more illustration to offer of the advantage of breaking up good loamy down land well situated and laying down the like quantity of poor outlying arable into pasture or sheep walk, as the downs are often called. We obtained permission for a tenant to be allowed to do this, and not only on account of the benefit to be derived from the conversion, but also of the situation of the fields, which were both favourably situated for the exchange. These fields of about 27 acres each, one being in down pasture and near the centre of the farm, were broken up and converted into arable; the other, being arable situated at the outlying part of the farm, was well prepared and laid into pasture or sheep walk, being sown with the finest permanent grasses. Large tracts of poor clay soil which were originally arable exist in various districts, particularly in the midland counties, and instead of being laid down with judgment had evidently, from the ridge and furrow being visible, been allowed to run to waste; and where dairy farms consist of this description of soil from 10 to 15 per cent. may be broken up and relaid, keeping up this proportion of land under culture until the whole has been relaid, which if properly done will greatly improve the letting value of the property, and also furnish straw and roots for the cattle whilst the breaking-up and relaying is going on. We also recommend that on some of the best pasture farms from 10 to 15 per cent. may be broken up and kept in arable, so that a good supply of the produce of the arable may supplement the grass in the feeding of cattle.

#### WORK ON THE HOME FARM.

*Horse Labour.*—Wheat must now be sown upon all heavy and cold soils. This work, however, may be deferred until the middle of November upon dry land, especially after clover lea, for we find the little white slugs very numerous; and by sowing the wheat a fortnight later than the usual time we may get frosts sufficient to prevent these enemies to vegetation from doing serious mischief. In ploughing the lea ground for wheat it should be pressed at the same time, when no doubt great numbers of the slugs will be buried and crushed to death. Where the work of ploughing and pressing is behindhand the steam ploughing and pressing is a capital substitute for horse power, and fortunately there are but few districts now without the steam tackle being available for this work. In those cases where the farm work is in arrears steam power will recover lost time, and it will be required oftener than usual this season, as, owing to the harvest having been so late, it has seriously impeded the work of the farm. We must still call attention to the advantage of doing some autumn tillage upon that portion set out as a root lain for next year. Particularly is it desirable to till the land intended for mangolds or early root crops of any kind, such as carrots, cabbage, and early Swedes; the remaining portion should be sown with seed of trifolium, vetches, rye, &c., which, however, should be sown upon the cleanest of the land, so that after these crops are removed there may be less horse labour required at the busy period of summer. In cleaning land for mangold and the other early root crops we may be enabled to clear the surface as late as the month of November, for if the weather proves open enough to work the scarifier, drags, &c., the accumulated weeds and rubbish may be carted away to heap, there to rot, for it is seldom that at so late a period the weather will enable the home farmer to burn the grass and weeds in the open field. This work may therefore be undertaken without reference to the burning of weeds. Of course the land would not be quite free from the roots of couch and water grass; yet after the surface has been cleared and the land laid up for winter by deep ploughing, the early root crops may be sown without ploughing in the spring, the land being prepared by the scarifier, &c., only. This plan has many advantages over spring-ploughed land, because it will always be moist enough in the driest seasons for the seed to vegetate, and the land will always be fine and kind, because we make use of the weather-beaten surface which has been ameliorated and prepared by the alternations of frost and winter storms. Storing or heaping of mangold will still be going on. It is, however, a good plan to save the horse labour at such a busy time as wheat sowing by pitting the roots in the field by casting them into heaps at regular distances, and cover them over with straw or seaweed and earth if they are to remain during the winter for feeding sheep in the field, otherwise they may have less covering and be drawn to large store heaps at the farmstead after the busy period is past.

*Hand Labour.*—The work we have just been recommending is hand labour properly, but it was so connected with the subject of

horse labour that we could not well divide it. Swedish Turnips, too, may be pitted in the same way where they were early sown, and particularly where there is a head of game; these roots ought always to be covered in heaps in the field during the winter, and until they are required for feeding sheep, or be taken to the home-stead for feeding cattle. Horses now should be fed upon roots, either carrots or early-sown and ripe Swedes, for nothing can justify the old plan of feeding farm horses upon all dry food during the busy periods of wheat and barley sowing. It is quite impossible for horses to do their work so well during the winter and spring months eating dry food only, besides which it is the cheapest way to use roots. Our attention was first called to this matter many years ago by a statement in the report from the county of Suffolk to the Board of Trade, in which it was stated as the common practice for the farmers to economise the feeding of horses by using only one bushel of oats per week per horse, the difference or substitute for a full allowance of oats being made up by carrots given with hay chaff; and it is not only economy in feeding the horses, but the advantage also of turning crops to the best account, for in feeding horses an acre of carrots being a full crop will go as far as five acres of oats, straw included. The sheep on the farm, particularly the fattening flock, ought now to be doing well by having a full allowance of cut turnips mixed with cake or maize meal. A fair proportion of hay chaff, much of the hay this year being damaged by rain, has little or no aroma, in which case it should be spiced when being cut into chaff and then cast up into heap for a day or two; this will give it an attractive aroma, and also improve the feeding value. We recommend the "Botanic Flavourer" and "farina," sold by T. Bowick & Co. of Bedford, as the best and cheapest article in the market. The same method of feeding may be applied to fattening bullocks as well as sheep, likewise for horses where the hay is cut into chaff.

#### SPECULATION IN POULTRY SHOWS.

THE number of poultry shows held this autumn has considerably decreased from former years. Some of those which have been discontinued are regrettable, as old-established and well-managed meetings; the greater part of them served no real purpose, and their want will not be felt. We have long foreseen such a sequel to the absurd multiplication of all exhibitions, and hail it with satisfaction.

We have so often given our opinion as to the circumstances under which shows should or should not be held, that we will not weary our readers by returning generally to that theme. We wish, however, to say a few words upon the, we fear, increasing tendency to speculation in shows. They ought certainly to pay, and we have often advocated their being held alone in centres of districts where some interest is taken in them, and where they have a chance of being financially successful. In many places, too, it is quite proper that those who give much time and trouble to their management should, if they are willing to accept it, receive some fixed remuneration for their labours. But there are other shows, generally small ones, and these we fear on the increase, which are simply started as gambling speculations. Subscriptions towards them are not infrequently got out of the neighbourhood under the pretence of encouraging poultry breeding, which practically all go into the pockets of the clique who manage them. We say practically, for we do not mean that the managers absolutely purloin the sums subscribed, but they so arrange things that they and their friends carry off the major part of the prizes. To begin with, all the best prizes are offered for such breeds as they possess; then they carefully watch the entries as they come in; if certain classes are thin they immediately buy cheap birds to win in them, and having the command of the entry book can of course make entries as late as they like. On the other hand they send postcards in all directions to the effect that the classes in which they do not care to exhibit are poorly filled, often when such is by no means the case. This may sound a fanciful description, but we have over and over again had proof positive of such tactics being pursued. Indeed we are sorry to say that if we have notice that some class is badly filled we generally conclude that it will be a peculiarly large one; but whatever chance there may be on either side, fanciers should on principle never listen to such appeals. The date for receiving entries may under certain circumstances legitimately be postponed if the fact be duly advertised, but private hints and invitations should be resolutely disregarded.

The prize list having been thus arranged, no little gain from that source flows in to the promoters of the show. In some places the subscriptions are considerable and cover nearly all the prize money. The general management of a large winter show, including hire of hall, lighting, &c., is an expensive item, but the exhibitions to which we allude are generally summer ones, the cost of which is very small. Then the gate money, if the show be held at a time of some other attraction and the weather be fine, is often enormous. Perhaps there is a considerable per-centage on sales. The result is, that at times between prize money and general profits the managers pocket really large sums, which ought properly to be carried to the funds of a society to be

expended another year in better prizes, and so really encourage the breeding of poultry. On the other hand things sometimes turn out differently; a pouring wet day comes, or somehow the show does not "take," and entrance money is almost nil. What happens then? The prize money is often not paid; at others appeals *ad misericordiam* are made to exhibitors to forego their winnings. We do not for a moment mean to say that there are not cases in which after real failure every penny of prize money is honestly paid, and that by those who can ill afford it. We well know instances in which this has been done. Our meaning is that we object to speculation in shows. Formerly horticultural exhibitions were often got up this way; they have now, we believe, been entirely put down. There is much temptation to movers in them not to be honourable, or at least not to promote the interest of poultry breeding.

Speculation in shows is intimately connected with speculation in buying birds for show alone. To what lengths the latter practice may lead has been unfortunately shown during the past week in the case of inhuman brutality to a bird with the sole object of winning a prize, most properly shown up and punished in a court of law. It is a sad pity that what should be an honourable amusement for honourable people, with all the while a really good and practical end in view, should be dragged by a few gamblers into ill repute. The poultry fancy is running considerable risk of making such a descent. Its fall may, however, be arrested if the bulk of fanciers who are upright and honourable ladies and gentlemen will only take the trouble to ascertain beforehand how shows which they patronise are managed. Those should alone be encouraged which are promoted by a society with real and definite aims, or which are undertaken by a committee containing known names, who not only guarantee the payment of all prize money, but that all surplus profits, after the deduction of reasonable remuneration for work, shall form a fund for the improvement of the prize lists of future shows. There are plenty of places with good exhibitions where these guarantees are to be obtained. If fanciers, in the true sense of the name, will not give themselves the trouble to discover and encourage them they will find their amusement of exhibiting gradually cease to be such, and will to a great extent have themselves only to thank for their loss.—C.

#### THE OXFORD POULTRY SHOW.

ON Wednesday and Thursday in last week the eighth great Oxford Show took place. Of course after the miserable weather of the past season many of the chicken classes were not what we remember them in past years, still compared with other shows which we have lately seen it was a fine exhibition. The arrangements were much as usual: The poultry generally (they numbered altogether 850 pens) occupied the Corn Exchange, the fancy waterfowl being in the large gallery; a side gallery in which the baskets were formerly stowed was given up to the classes of dead poultry; the 1800 pens of Pigeons were in the Town Hall, and the connecting corridor was filled with large waterfowl, Turkeys, and selling classes. The attendance of visitors seemed hardly so good as in former years, still there are always to be seen at this Show a large number of evidently non-fanciers, which we always think a good sign for financial success. Apparently subscribers and donors of cups did not this year receive free passes and other tickets, which change ought to add considerably to the receipts. The management was, as it always has been, very good and orderly. The names of the owners of the birds referred to are placed in parenthesis.

*Dorkings* were by no means such classes as we have before seen at Oxford. Neither the first (F. S. Lowndes) or second (Mrs. Troughton) Darks were fine. Though we liked the shape and short legs of both the cockerels, we liked the cockerel in third pen (B. Smith) for his white feet. On the whole we much preferred Messrs. Smythe's highly commended pen to any others, the cockerel of which was a grand bird. Silver-Grey cockerels were better than the pullets. The first cockerel (B. A. Boissier) is a magnificent bird all round save from a blemish, a wry tail; we have seen him before in a first-prize pen, and have remarked on this point. The two other pairs of winners (Plummer & Rutledge) are fair birds. The first White cockerel (Mrs. Logan) is very good, short-legged, and full-breasted; the other winning pairs (Mr. Hayne and Miss E. Williams) worthy of their positions. Cuckoos this year are absent. *Spaniards* are much better than we have before seen this year. The first-prize pen (Jabez Walker) are very remarkable for their fine condition, for the quality of their faces; the cockerel, too, in the third-prize pen (J. F. Dixon) had a fine face but not so refined as the first. *Cochins*.—First in Buffs (G. H. Wood) a good pair of lemon-tinted birds which have won before; in the second-prize pen (H. Tomlinson) is a cockerel promising one day to be very fine. Among the pens of Partridges are many birds which promise in another month's time to make grand cockerels; at present they are backward. The pullets are forwarder—first (C. Brown), and third (J. Wood), were very good. *Whites*.—The best pen (W. Steven) of *Cochins* in the Show were a pair of Whites, short-legged, fluffy, and pure in colour. They changed

hands at a high figure, we heard £80. The second Whites (H. Tomlinson), too, were a good pen and large, but in shape not quite so much to our fancy. We should have been inclined to give a place to the pair of good Blacks which were very highly commended (W. Badger). *Brahmas*.—The cup for Darks (H. R. Wiggins) went to a pair the pullet of which we cannot notice, for we did not see her. The cockerel was a magnificent bird all round with what is seldom seen, the finest foot-feathering yet soft hocks. The second pair (Miss E. Shuter) were good, the pullet of a fine shade of colour but deficient in pencilling towards the throat. These two pens were decidedly ahead of the rest. In Lights the cup pen (G. H. Wood) contained the cockerel which won at the Dairy Show, a neat and shapely bird all round but with terrible hocks, the pullet very fine; the other winning pens (P. Haines), good in some points, were not very well matched pairs. *Langshans*.—Eleven pens were entered; we should fancy the first-prize pair (R. H. Bush) were well selected from their admirers' point of view. *Game* were, as usual at Oxford, an immense collection from the valuable prizes offered for the breed. Nearly 150 pens were entered. Mr. Pope again won in Black Red cockerels with a striking bird, which quite reminded us of the wondrous bird he brought out two years ago, which created so much attention from his frequent change of owners at enormous prices; second (S. Matthews) a fine but young bird; fourth (F. A. Nelson) was, we heard, the Dairy Show winner, which shows that Oxford has been more successful in bringing out the best birds of the year. Black Red pullets were another good class. First (S. Matthew) good all round; second (T. P. Lyon) very lengthy but not so neat; third (J. H. Caton) a coarser bird. Brown Red cockerels were not so good as the Blacks. The £5 cup for best unskinned Game cockerel went to the first in this class (E. Wells), a good bird all round, though some good judges found much fault with him; second (J. Chester), a good bird, hardly the modern fancy in shape. Brown Red pullets were a large and good class; first and second (A. Fludyer & S. Matthew) most remarkable birds. In the any other variety class of Game Duckwing cockerels were first and second (R. Garnett & J. F. Walton), both nice birds; a capital Pile third (J. Colgrove). Two Pile pullets won (J. Colgrove) in the next class. In the undubbed cockerel class a very fine Pile won (J. Colgrove).

*Hamburgs* made good classes for the south of England, between sixty and seventy pens being entered. Golden-pencils came first; first pair (Mr. J. Rawnsley), both very good in colour. We specially liked the cockerel; the second (Messrs. T. & J. Kidson) pullet was beautifully barred, we thought her the best pullet in the class. Silvers were better than the classes of them we have seen of late. The cockerel in the first (H. Digby) pen was a capital bird with well-barred tail, the pullet a bird with small and neat pencilling. The cockerel in the second (W. Reddihough) pen was not in good condition, the pullet very well marked; the third (J. Rawnsley) cockerel took our fancy. Golden-spangles were a large class; in the first-prize (R. W. Bracewell) the cockerel was a handsome bird in carriage, and in fact in all points, the pullet fairly mooned; second (R. W. Bracewell) a sickly-looking cockerel with a very handsome pullet, the best we thought in the class. Silver-spangles decidedly a good class; the first (G. Mitchell) pair were very fine in mooning, the spike of the cockerel's comb not so good as it might be, but we prefer this to those extraordinary made peaks so often seen; in the second (J. Rawnsley) pen, too, was a very good cockerel, and in the third (H. Beldon) as forward a one as any in the class. The first (J. W. Kelleway), Blacks were very perfect in comb and figure, but their position as regards the light was not favourable to the sight of their colour. We admired the pullet in the second (J. Pickup, jun.) pen. *Polands*.—Golden had a class to themselves, we fancy aided by the liberality of some fancier, for the competition in Silvers is now generally greater and closer than in the Golden variety; the first and second (J. Rawnsley and E. Burrell) prize pens of the latter variety were both rich in colour and good in crests. In the next class Silvers were first and second (A. Smith & G. C. Adkins), the pullet in the first pen being magnificent. White-crested Black had to be content with a third (J. Rawnsley), though they were a good pair and well shown. *Houdans* are now generally disappointing; we kept them ourselves in the early days of their importation, and certainly think that though the combs and crests of our birds were by no means so "correct" as those of the birds now shown, still that the race was stronger on the leg and more vigorous and sprightly than those now shown. The first-prize (D. Lane) pair at Oxford were large but extremely dark, the cockerel really almost black with a lighter crest; malformed feet seem the order of the day with the breed. *Crèpes* seem to succeed now-a-days better than Houdans; we much liked the first-prize pair (A. Ogden) for their square bodies and fine condition; they looked every inch suited to be the progenitors of a fine race of table fowls. The other prize birds, too, were good. *Malays*.—There is little variety now in the colour of exhibition Malays; red cocks and cinnamon to brown pullets prevail. The first pair (J. F. Strugnell) were remarkable for their size and stoutness, the second (G. Barnell) for their condition, the third (Mrs. M. A. Stanley) for their leg-

giness. *Leghorns* continue to look up. The first (E. Gibbs) pair of Browns were not very large, but beautiful in condition and well matched. The ugly yellow lobes seem to be gradually got rid of. The first Whites (A. D. Esmarch) were a beautifully shown and pretty pair. *Andalusians* are another rising breed; we do not wonder at this, for they certainly are most beautiful, and non-fanciers always seem taken with their colours. First were a pair (Rev. S. Ashwell) which we think we have not seen before, good all round, well laced; second (Mrs. M. A. Wilson), a handsomely formed cockerel with a pullet hardly his equal. *Sultans* are creeping into notice, certainly a well-shown pair, are very attractive. The prize pens seemed to us very even, the first (Lieut. Jenkins) winning from being well through the moult and in good condition. Any other variety were interesting. First (Rose Hubbard) capital Scotch Greys; second (G. Furness) good *La Flèche*; third (J. C. Fraser) what are called *Havanas*, extremely like the produce of a Silky and some small black fowl; we would not encourage the breed. There were some good Black Minorcas in the class, some good Silkies, and some white birds called *La Flèche*. *Bantams*.—Game were for these days numerous, twenty-four pens of Black Reds put in an appearance. First (E. Walton) a beautiful pair, the cock an old bird in wonderful condition; we noticed a good pullet in the third (W. F. Addie) pen. The winners in the class for Brown Reds seemed all good. Piles came in first and second (W. Cannon & W. F. Addie) in the "any other Game" class. Black Rose-combed had sixteen entries. We think smallness of size in this breed has of late been much sacrificed to earlobes; the first prize (H. Stanworth) pair might with advantage be smaller, otherwise they are a pretty pair. *Sebrights* are perhaps better than ever in lacing but much over-size. First and second (M. Leno) were Silvers, third (M. Leno) Golden. Beautiful little Pekins (H. B. Smith) carried all before them in the "variety" Bantam class.

*Ducks* were well provided for with six classes. *Aylesburys* were as good a class as we have ever seen. The first-prize (Messrs. Fowler & Co.) pair, we believe birds of the year, were enormous. *Rouens* were very numerous, no less than two dozen pens entered. The first (T. Wakefield) pair again were easily ahead for their enormous size. Pekins and Cayugas were combined. The prizes all went to the former variety. Black East Indian have gone down. It seems difficult to get good lustre and small size combined. We were pleased to see that one of the oldest, we believe the oldest fancier, in England of the breed (Mrs. M. A. Hayne) took first honours. *Carolinas* were first (H. W. Boutcher) in the next class. *Turkeys* and *Geese* were not large classes, but the winners in both classes were of good average size; the first *Turkeys* (W. Wykes) being bronze, the first *Geese* (E. Snell) Toulouse. Mr. Sainsbury judged the waterfowl alone. We believe his awards gave great satisfaction, and it is certainly a far better plan to have one judge specially skilled in these classes, and not put them at the end of a long book of classes to be adjudicated on by a tired judge, as is so often the case.

Dead poultry were a new feature in the Show. Fourteen pairs of fowls were entered. The Langshan breeders will probably feel elated on seeing in the prize list that their favourites won. We cannot say that they looked so tempting as two nice small-boned Dorking pullets, which were second (T. C. Burnell). Some very fat Ducks and Geese appeared, and but one Turkey.

The show of *Pigeons* was so vast that after a careful examination of the eight hundred pens of poultry we found it impossible to scan them with sufficiently critical eyes for our notes on them to be of value. As usual at Oxford nearly every variety was well represented, and some classes were extraordinarily good and well filled, especially those for English Owls, Dragons, and Antwerps. The latter variety filled no less than 260 pens.

The Judges were for poultry Messrs. E. Hewitt, R. Teebay, and J. Martin; for Waterfowl Mr. G. S. Sainsbury; for dead poultry Mr. J. Turrill and Mr. P. Hicks; and for Pigeons Messrs. H. Allsopp, F. C. Esquilant, P. H. Jones, and Capt. Norman Hill.

## HOW TO TREAT CONDEMNED BEES.

### DISCOVERY OF A NEW METHOD OF GIVING ARTIFICIAL POLLEN.

COTTAGERS adhering still to the miserable and wasteful plan of burning take up, as a rule, those stocks that are too light to stand the winter. If such were allowed to remain they would consume all their little horde of sweets and then starve. The cottager therefore is right, from his point of view, in destroying the bees, and thus securing the honey for his use. The poor insects marked out for destruction are commonly known as condemned bees. If in autumn 4 lbs., or thereabouts, of these turn-outs—i.e., the united bees of three or four skeps—be put together into a hive and fed liberally they will quickly build comb, raise brood, and establish themselves so as usually to winter well and make some of the best colonies of the apiary in the spring. The wax secreted for the building of the comb is produced from the sugar given as food, while the bees gather, if the operation of building-up be not deferred till too late in the season, sufficient

pollen to enable them to raise a fair, if not even a large, amount of brood.

Some experiments with these condemned bees, which I take to be in their results exceedingly instructive, I will now recount. On September 19th I placed 4½ lbs. of bees in a large and well-protected hive, in the frames of which narrow guides only were provided. The first two days they took 4 lbs. of syrup, but afterwards for seven days they were provided each evening with a filled bottle containing 8 lbs. 11 ozs. of syrup. They built comb of great evenness and whiteness, which now more than half filled the hive, yet the queen laid but few eggs. The reason, upon theoretical grounds I was convinced, was lack of pollen. Very little at this date could be found in our neighbourhood, as the land is mostly under cultivation. If the pinch for pollen was already felt, how was the greater difficulty of providing sufficient for early spring breeding to be met? I placed trays of pea flour (pea flour I first pointed out as a fine substitute for pollen, since it stands in the front rank as a flesh-former) near to the hives, sprinkling chaff over the pea flour, as is now generally well understood, to give the bees a standing place while gathering it on to the hairs of the thorax. A stock of *Ligurians* that had fed from these same trays in the spring started at once, and carried it heavily, but my newly arrived blacks seemed unable to learn the nature of the boon offered them, only an occasional bee loading itself. I now reflected that the pollen of anemophilous trees—i.e., trees fertilised by the wind—is not sticky, so that the wind soon separates it from its anthers and blows it on to the adhesive pistils of its flowers; while the pollen of entomophilous trees—i.e., trees fertilised by insects—is sticky, and so can the more readily be made into pellets by the different species of bees, and added, as an experiment, to my pea flour a small quantity of pounded sugar to increase its adhesiveness. It was now perhaps loaded more easily and quickly by the Italians, but the blacks, as before, listened not to my wooing. The problem to be solved took this form: We can give sugar without asking our bees to leave their warm cluster to take it, but artificial pollen, even if accepted, needs the bees to quit the hive and expose themselves often to a temperature so low that many must perish; while the weather, when nitrogenous food is essential, may be such as to altogether prevent any outside gathering of it. How, then, can pollen or its substitute be given within the hive?

In the natural way bees collect the pollen on the breast, and transfer it by the metatarsal brushes to the pollen pockets on the tibia; but to accomplish this, as may be seen by watching a bee over a flower, two of the three pairs of legs are required, and since the bee cannot stand on the remaining pair this packing is of necessity effected on the wing. I, in order to meet this requirement, placed a small tray of pea flour on the top of the hive, and added a small covered flight chamber, so that the bees coming from the top opening might have room for the hovering flight while packing. This was partially successful, but had this drawback—that the warm air of the brood nest was leaking freely away into the chamber above. It now occurred to me that bees, when natural pollen is stored, place over it a layer of honey, and then wax seal it. After extracting the top of the stored pollen, saturated with honey, is constantly seen. Can it be wrong, therefore, to place the pea flour mixed with honey or its equivalent at once in the cell, and so save the bees all the exposure, labour of gathering, and storing it? I now mixed some pea flour with syrup, containing the small quantity of salicylic acid I have previously recommended, into a paste, and, removing a comb, applied it with a flat knife, as boys at school sometimes apply butter to bread to fill up the holes. About 8 ozs. of pea flour were soon put into the cells and the comb returned. Two hours after upon removing the comb, to my intense delight, the bees had sucked out the excess of syrup, and had packed my pea flour down in the most beautifully regular manner, as though it had been pollen gathered in the natural way. The problem was now solved. What with much labour, and probably much loss, could only have been accomplished by the efforts of hundreds of bees had been done through my help by a few bees with comparatively no exhaustion, and actually no exposure. The next day the greater part of this pollen had been consumed, while the dry starved appearance of the brood, well known to those who have overwintered artificially, had passed away. Giving doses of pollen as needed the breeding quickly became rapid, and that hive has now not only a very large quantity of brood, but comb-building has again commenced.

On the 8th inst. I put 4½ lbs. of bees taken from five skeps into an empty hive and fed freely, and on Saturday the 11th I examined it. Comb had progressed well, and eggs were laid. As I removed a comb and pasted my pea flour mixture into it I felt some compunction in marring its spotless purity. On Monday the 13th another examination was made, when I expected to find the pollen packed, as in the other hive under experiment; but, to my astonishment, in the forty-eight hours almost the whole of it (about 8 ozs.) had been consumed. There were yet no hatched eggs that I could find. The bees then, under the labour of comb-building, needed the nitrogenous food to make good the wear of tissue involved. The microscope showed pollen granules in the



stomachs of wax-workers, which gather naturally. These bees had made comb on sugar only, but no doubt were growing in some sort emaciated under the process, and the pea flour supplied the place of the pollen they would have consumed whilst gathering their sweets had this been done in the normal manner. What an absolute refutation this gives to the notions of those who assert that bees never consume pollen, a statement which has no better base than a guess, and which is utterly at variance with all scientific theories of diets. This later hive, worse off as the season is more advanced than the one first named, is going ahead splendidly, and is raising great breadths of brood, and is receiving its pollen as occasion requires. To-day, the 25th, it divided 6 ozs. of pea flour, exclusive of syrup, with the other stock mentioned, and this amount no doubt by Monday will be much reduced. I am quite willing to show these bees to any really interested at such times as they can be examined without risk of much chill. We see here a way of building up bees almost without regard to the season, for not only now can we give syrup, which is but half a diet, but pollen likewise, without one wing being moved in the chilly outside air. If any reader can assist me in obtaining another 4 or 5 lbs. of bees for an experiment yet to commence I am prepared to give fair payment and my best thanks for the assistance. The judicious use of this plan in promoting breeding in the spring will no doubt lead to great results, upon which, all going well, I may in due time make some comments.—FRANK R. CHESHIRE, *Avenue House, Acton, W.*

### THINGS KNOWN AND THINGS UNKNOWN.

GOVERNMENT and organisations in the kingdom of a bee hive are things beyond the reach of human knowledge. While united effort and perfect order are remarkable features in the conduct of a community of bees, who knows aught of individual authority and rule? All seems to go well and harmoniously on the lines or laws of equality and fraternity. The queen herself—the great bee of the hive, which receives the greatest possible homage and attention—is subject, at least in appearance, to the community which she so faithfully and laboriously serves. Queen and servant she is, but not governor. It is known that the monarchy of a bee hive is neither absolute nor hereditary.

The industry of the honey bee is a fact known in all lands, and is the theme of poetry and song amongst civilised and enlightened communities. It is hardly possible to form an adequate conception of the industry of bees. The amount of work done by a swarm in the height of the season cannot be measured or compassed. A swarm has been known to gain in weight 10 lbs. a day—20 lbs. in two days; but who can tell the amount consumed to meet the waste and wear sustained in the manifold activities and labours both at home and abroad of such active creatures as bees? The amount of food consumed by bees during a day of hard work is great, and should not be forgotten when their industry is under consideration. Even at night in summer there is a considerable loss of weight by the escape of moisture of a strong full stock through the hive and by the door. At one time many able beekeepers believed that the queen alone distributed her eggs; but many now know that the bees assist in this work by removing the supernumerary eggs from the cells in which they are found and placing them in empty cells. But the question of how much heat is necessary in hatching brood remains unsettled. Brood evidently is brought to perfection at the swarming season in a high temperature, and often in February at comparatively a very low one. This is an interesting question for experiment: also the question of how much pollen is used in rearing brood, and how much or how little is eaten by adult bees. A few tangible facts about the consumption of pollen would tend to remove doubt and difficulty, and clear off the darkness that surrounds the subject. Can anyone supply the Journal with them?

Though I have never been fortunate enough to possess a fertile worker, or found proof of the existence of one in my apiary during half a century of observation, I have no doubt of the fact that fertile workers have been occasionally found by other apiarists; but the proximate or procuring cause of fertile workers is one of the many mysteries of bees. A few days ago the following letter was sent to me by a bee-keeper in Mythturoyd:—"Dear Sir,—Can you give any information on the following subject? I have a hive without a queen containing eggs and brood. I took a swarm from it in July, when it had two cells with ripe queens; where they have gone I cannot tell. It has what some call a fertile worker. I have put the bees in a glass hive, and have seen the bee that lays the eggs; to all appearance it is nothing but a worker. If I lose sight of it I cannot pick it out again till it enters a cell. It first looks into a cell, then backs in just the same as a queen. None of the other worker bees do that. I am confident it is a common worker, but how it is that it can lay eggs I cannot tell."

One of the greatest marvels of bees is their wax-making powers. It is well known that wax is a secretion and excretion of bees; that the work of secreting wax goes on both by day and night—in the fields as well as in the hive; that during the comb-building season hundreds and thousands of bees may be seen and caught in

returning from the fields with four, often six, plates or scales of wax each half excreted or thrown off from the rings of the under sides of their abdomens. The quantity secreted, the way and apparent ease of excreting wax, are alike wonderful. The mysterious marvel of all is the fact that this wax-producing power is voluntary—put into action by the will of the bees. This may be proved in many ways, but simply by putting a swarm into an empty hive. The bees at once commence to make wax, and in less than twelve hours some comb is built. In honey weather the hive may be filled in less than twelve days. If another swarm be put into a hive full of combs the bees commence to fill them with honey, but the bees make no wax save, perhaps, a little for cell-lids to cover the honey and brood. In comb-building a great many of the wax plates fall on the boards and remain there unused. Their presence and accumulation are signs of health and prosperity. In full hives few wax scales are formed and fewer lost. If wax were not a voluntary secretion much honey would be consumed and wasted in the production of wax when it is not needed. In covering cells of brood the bees use materials of the same colour as the cells. If the brood combs are dark in colour the covers are dark too. Why this is done is left to conjecture.—A. PETTIGREW.

**FOUL BROOD.**—It is supposed that there is not one hive in fifty that will survive the winter without food, and it is feared that foul brood is more than commonly prevalent. I have one hive affected. I have never before seen it or had it in any of my hives. In ordinary thriving hives there are three different substances to be seen in the cells—namely, honey, pollen, and young bees. In the case I refer to now there is a fourth substance, and when the lid is taken off the cell there can be taken out a sticky brown stuff. It appears here and there in a hive, and is the worst disease that affects bees, and was until lately reckoned incurable. Mr. Frank Cheshire, an able and pleasing writer on bees in London, sent me the only known cure—salicylic acid—to mix among the food.—JAMES SHEARER, *Cairnie.*

### OUR LETTER BOX.

**FEEDING HIVE (Buz).**—It is difficult to say how long you should go on feeding, because we have no clue to the mode adopted. From your letter it would appear that you administer food at the entrance by means of troughs. This is at best a poor way of feeding bees, because of the very small quantity which can be administered at a time. In this case you must not cease feeding after such a season as we have had till the frost comes, and you must resume it again when the weather is open in the very early spring. But we should advise you to make a hole at top of your hive and to feed them by bottle, carefully covering them with an empty hive and stopping up every crevice, so as to prevent the ingress of robber bees. We would not advise you to smoke your bees in the way you have attempted, but a little smoke will be necessary if you make a hole in the top of the hive. Mr. Cheshire's article on page 337 will afford you much information. See, also, the reply to "Subscriber" on page 338.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.  
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Barom. ter at 32 and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1879.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Oct.										
We. 23	30.974	47.5	46.4	W.	47.5	53.4	37.3	54.3	31.9	0.720
Th. 23	30.045	53.3	52.1	W.	48.5	56.3	47.5	61.4	46.6	0.670
Fri. 24	30.493	51.4	55.3	S.W.	48.9	60.5	53.0	74.0	51.9	0.100
Sat. 25	29.744	43.7	44.3	W.	50.5	56.3	46.3	52.3	42.3	—
Sun. 26	30.023	49.9	49.3	N.E.	48.5	53.7	38.4	78.4	38.9	—
Mo. 27	30.124	52.4	51.4	S.E.	48.0	57.6	48.0	52.3	35.4	—
Tu. 28	30.261	50.0	47.1	E.	46.9	53.1	47.5	61.1	42.3	—
Means.	30.003	49.3	48.5		48.0	55.9	48.3	74.5	46.0	0.370

### REMARKS.

- 22nd.—Foggy morning, turning to drizzling rain by 10 A.M. till 2 P.M.; little finer in afternoon; very damp evening.  
23rd.—Damp dull day; drizzling rain at intervals in morning; dull but fair afternoon and evening.  
24th.—Very clear and fine in early morning; damp and drizzling rain after 1 P.M.; 4.30 P.M. to 5 P.M. sky bright and clear; 5.15 P.M. shower; damp cloudy evening.  
25th.—Very bright fine day; foggy evening, clear at 11 P.M. and moonlight.  
26th.—While frost in early morning; fine bright morning; rather cloudy in afternoon, few drops of rain 3.30 P.M.; slight misty rain in evening, but no measurable quantity.  
27th.—Dull in early morning; very fine bright day; moonlight evening.  
28th.—Fine but dull cloudy day.  
Very ordinary autumnal weather; rather warmer than the previous week.—G. J. SYMONS.

### COVENT GARDEN MARKET.—OCTOBER 29.

LARGE importations of Apples are now reaching us from America, considerably affecting home supplies, and in the case of common sorts rendering them quite unsaleable. Trade keeps quiet, prices being generally below the average.

## WEEKLY CALENDAR.

Day of Month	Day of Week	NOVEMBER 6—12, 1879.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.							
6	TH	Linnæan Society at 8 P.M.	52.4	36.9	44.7	7 4	4 23	10 27	0 59	23	10 16	310
7	F		52.1	36.7	44.4	7 6	4 22	11 42	1 19	(	16 13	311
8	S		52.0	34.3	43.1	7 8	4 20	Morn.	1 37	24	16 9	312
9	SUN	22 SUNDAY AFTER TRINITY.	50.5	33.8	42.3	7 9	4 18	1 0	1 53	25	16 4	313
10	M	Lambeth Chrysanthemum Show.	50.4	34.0	42.3	7 11	4 17	2 20	2 10	26	15 58	314
11	TU	Putney and Torquay (ditto).	50.2	34.2	42.3	7 13	4 15	3 44	2 28	27	15 52	315
12	W	Twickenham (ditto).	50.3	33.8	42.0	7 15	4 13	5 11	2 50	28	15 45	316

From observations taken near London during forty-three years, the average day temperature of the week is 51.1°; and its night temperature 34.8°.

## CLOSE VERSUS WIDE TRAINING OF WALL FRUIT TREES.

**O**WING to the extremely unfavourable season for ripening the growths of fruit trees the above subject appears to me to merit great consideration; and now that the pruning period is approaching, the time seems opportune for directing attention to the importance of thin training as the first essential requisite for securing ripened wood. Few persons, I presume, have cause to complain that their trees, when healthy, have not grown freely this year, for in most cases they have grown luxuriantly, but how to get the growth matured is another matter. I do not presume to solve this problem as regards the present much too green and succulent growth, but I think I may venture a suggestion that may be of use for the next and future years.

In the first place, then, it is my opinion that the generality of wall trees are allowed to carry twice the quantity of wood required. This perhaps may not be very apparent during winter when the leaves are off the trees, but in summer is it not a very common occurrence to see the branches of wall trees so closely trained that the leaves overlap each other and hardly an inch of the wall can be seen? Many indeed seem to pride themselves in being able to hide every inch of the wall. Now, in a season like the present I consider this a great disadvantage to the trees, and a sure way of securing unripe wood. Under this system of close training the wood is never exposed to the sun until the leaves commence falling in autumn, then it becomes necessary to sweep off some of the leaves to enable the wood to be ripened. It is quite impossible that the wood can have ripened when the leaves were covering it; but were the branches trained so thinly that everyone was quite clear of the others all through the season we should hear less of badly ripened wood, and any unnatural process of trying to ripen the wood late in autumn would not have to be resorted to. If every shoot were fully exposed to light and sun during the whole period of growth the wood would be matured by the time the fruit was ripe, as is often the case with thinly trained Vine shoots.

For some time we have been observing and taking note of some of our thinnest trained wall trees, and comparing them with those having their branches growing more closely together, and so far as fruitfulness is concerned it is decidedly in favour of the thin-trained trees. I am referring to Peaches, Apricots, Plums, Cherries, and all other fruits against walls. Some of our most scraggy Peach trees with branches a foot apart, or in some cases more, have produced more fruit this season than the most luxuriant-looking trees, and we can attribute the difference to nothing so much as the close training of the latter.

The system of thin training applies, no doubt, with greater force to trees grown in cold districts than to those grown in what is termed the "sunny south." During ordinarily fine seasons good Peaches have been ripened in favourable localities when the trees have not been trained thinly; but

even in those cases it is fair to assume that the fruit would have been still finer, and the wood better matured, if the wall had been less thickly covered and the bearing wood had been less densely shaded with foliage. Even in the most favourable summers and sheltered positions and warm localities trees on walls, I apprehend, would not be injured if a thinner system of training were adopted; while in less favourable districts—indeed I may say in the great majority of gardens, the change suggested would be unquestionably advantageous both to the trees and their owners.

Another disadvantage of close training is the favourable harbour it affords for insects, which include woodlice, snails, red spider, green fly, &c. Under a thick covering of leaves all these often do much harm before they are observed, and then it is not easy to eradicate them. When the branches are widely trained the insects have little means of hiding, but are readily seen and can be destroyed before they do harm.

As soon as pruning time comes this winter we intend cutting quite half of the wood out of many of our wall trees, and no branch will be left so close to another that the leaves of either will touch; and next summer, when the young wood is being made, more of it will be removed than we have been in the habit of taking out. By adopting that practice we are confident, from what we can see now, that the trees will be cleaner and better ripened than they are now, and that better crops and finer fruit will follow.

Peaches and other fruits under glass will be treated in a similar manner; for although the growths of trees under glass necessarily become more fully matured than those of trees in the open air—that is, if the former are not shaded and are generally well managed, yet I do not hesitate to assert that in at least two-thirds of the Peach houses in this country the trees are more crowded than is needful. In proof of this I may point to the extraordinary number of fruit that has often to be removed to enable those remaining to become fully developed. Would it not be in every way better to remove a portion of the growths that are manifestly not wanted than to permit them to grow to such an useless purpose as producing fruit to be removed in a small green state, leaving, be it observed, as too often is the case, the then fruitless growths to shade the parts that are fruitful?

It is not unusual for the inexperienced seeking information on training fruit trees to ask how far the branches should be placed asunder. The question cannot be answered in the form of an arithmetical reply of so many inches; but everyone may decide the question for themselves by consulting the foliage of each tree, which is an unerring guide. It has been stated in the Journal before, and the formula cannot be too emphatically repeated, that the distance between shoot and shoot should be slightly greater than the length of the leaves, including the footstalks, of any tree in question. If this mode of training were generally adopted the cultivator would have done all in his power to prevent overcrowding, and if the wood of the trees under his charge did not then become matured he would have less to reproach himself with. Bad seasons often teach wholesome lessons, and one of the most useful lessons suggested by the present

year is the one under notice—namely, the importance of training wall fruit trees more thinly than is commonly practised in the majority of gardens.—J. MUIR.

### DOUBLE PRIMULAS.

To the amateur who has a small amount of glass and heat at his disposal double Primulas are invaluable, as they do not require a high temperature during the winter months. If there is sufficient heat in the house to exclude frost and to prevent the foliage decaying they will succeed well provided other details of cultivation have been well attended to previously. In wintering the plants it is necessary that they should not stand too close together, and if the stage they are placed on is closely constructed it is best to stand them on inverted pots, so as to permit a free circulation of air between them and prevent damping. It is well to ventilate freely on all favourable occasions, and place the plants as near as possible to the glass. A house facing northwards is most suitable for them, but that is not a necessity.

The best time to propagate them is as early in the spring as possible, say about March, so as to obtain good specimens before autumn. Take off the cuttings with as much heel as you can, and remove any decaying scales there may be upon them at the base, and place them singly and firmly in thimble pots, well drained, and filled with a compost of gritty loam, sand, and a little soil finely sifted; then place them in a gentle bottom heat, not more than 65°. If the temperature of the bed is much higher than that they are liable to decay; if about that temperature you may expect 90 per cent. to root.

When the small pots are filled with roots at once shift the young plants into 4-inch pots, clean and well drained, using gritty fibrous loam and leaf soil, about one part of the latter to two parts of loam, with a good admixture of road sand if obtainable, or sharp silver sand. This will be about the beginning of May. Keep the plants well supplied with water, as they will grow rapidly until they require another repotting, which will be about the middle of June, when they may be potted into 6 or 8-inch pots, employing a compost of loam, with well-decayed cow manure instead of the leaf soil, and a copious supply of sharp sand. Pot them firmly and low down in the pots, otherwise they get so loosened that they are apt to be broken off; and there are other advantages by potting them deep, as they more readily produce roots, and may be easily divided. After this potting they may be placed in a cold pit or frame in a shady position as near the glass as possible, shaded from the sun by means of tiffany or similar material. Keep them well supplied with water, giving occasionally liquid manure. They may remain in these pits till the end of September in ordinary seasons, and during August and September they grow very rapidly. They much enjoy the dewy nights and warm days. We frequently remove the lights from the frame when there is no likelihood of much wet, and the benefit resulting from such treatment is remarkable. You may secure plants in one season quite 18 inches across. The varieties enumerated below are the best in cultivation.

*P. sinensis alba plena*.—This is the oldest form, and is still much appreciated and well worth growing, but it is far superseded by the next.

*Fimbriata*.—This is a splendid white-flowered variety, producing very fine and double flowers, pure white when first expanded, with the edges beautifully fimbriated. The flowers are larger than the old White, and the plant has altogether a better constitution. For all purposes this variety is much to be preferred.

*Rubra plena*.—As a companion for the last this is indispensable. It is free-flowering, producing large very double flowers of a pinkish red colour, and very fragrant.

*Mrs. Eca Fish*.—This is a new variety. The trusses and flowers are large and borne well above the foliage, of a rosy-lilac colour passing to blush, with a well-defined white margin. This is a very elegant variety, and we can heartily recommend it as worthy of the most careful attention for cool houses. It is a free and strong grower.

*Atro-rosea*.—A free-growing variety, producing large trusses of well-formed and very double flowers of a deep rose colour; one of the handsomest of that series.

*Magnifica*.—Truly a very fine variety; a great improvement on the old Red. The flowers are very large and very double, with the edges of the floral leaves prettily fimbriated.

*Blushing Beauty*.—Very similar in growth, flower, form, and size to the white Fimbriata; but the flowers are all

suffused with a decided blush colour, which renders it very charming. It is very floriferous, and not at all delicate.

*King of Purples*.—In this variety we have a grand addition, for while it bears large well-formed flowers they are also very deep in colour, and assume quite a purple tinge. One of the most distinct and handsome.

*Rubra grandiflora*.—A superior variety; in fact, we have heard it termed the best. The flowers are of a reddish pink colour, well formed, and as large as small Chrysanthemums. It should be grown abundantly.

*Princess of Wales*.—A distinct variety producing good double flowers, which are occasionally striped with rose.

*Mrs. Byre Crabbe*.—This surpasses the last, and both as to its distinctness and beauty too much cannot be said. The flowers are well formed, very double, white, spotted and flaked with rosy carmine.

*Emperor*.—In this variety we have something very superior and different from the others, inasmuch as it belongs to the Fern-leaved varieties. The flowers are rosy red, large, and very double; finely fimbriated. This is one of the grandest of all.

*Empress*.—As a lovely companion to the last this should be secured. It is also a Fern-leaved variety; trusses large, bearing fine flowers, double, white, and exquisitely fringed.—T.

### KEEPING GRAPES.

THOSE who acted in accordance with the advice I gave in the Journal for the 10th of July, and made up for the deficiency in the natural temperature by the help of fire heat, will now have the wood of their Vines fully ripened. The foliage of Hamburgs will have put on its golden colour, rivalling even our beautiful Tulip Trees; the Muscats will have a mixture of russet and gold; Barbarossa, streaks and blotches of intense fiery scarlet. Lady Downe's and Mrs. Pince have the same colours, but are not quite so beautiful; while Alicante is assuming a softer red in various shades, and is more beautiful than any of them. To those who have this happy state of things I can now offer further advice, and tell them how if their fruit is well coloured, which can scarcely be doubtful, they may reasonably expect to keep their Hamburgs in good condition till the middle of January, Muscats a month later, Alicantes and other thick-skinned Grapes till the Strawberries ripen.

The month of November is undoubtedly the most critical time, and I am afraid that this season it will be more than ever so, owing to the immature state of the Vines in many places. Fruit may be coloured, and even tolerably sweet, but if the Vines are not matured to a certain extent it is hopeless to expect the fruit to keep for any length of time, because, however perfect it may be to look at, it is not really so. The gross young growth of the fresh leaves and shoots suit admirably while the flowers are expanding and the young fruit swelling; but when the fruit is nearly fully grown a gradual change comes over the whole system. The supply the fruit requires is not so large, and it also differs somewhat from that required in the earlier stages; the hardened stem and the partially ripened leaves appear in the natural course of things, and we could not doubt for a moment that they are essential to the proper ripening of the fruit. In practice we have it conclusively proved that they are so. Who is there can say that Grapes ripened in spring by highly artificial means, when the foliage refuses with all our skill to put on anything like autumnal colouring, are equal in flavour to autumn-ripened fruit in an ordinary season? It is not so with all fruits. I could name Strawberries which are improved by forcing, are better in April than in June or July; and, indeed, it may be said of Strawberries generally that the fresher the foliage the better will be the flavour of the fruit, provided it has a sufficiency of air and light. Melons, too, notwithstanding the too prevalent practice of keeping them dry when they are ripening, produce and ripen fruit of the best quality while they are growing rather vigorously and have abundance of water. Hardened stems and ripening leaves, then, are not essential for these and some other fruits, but to produce Grapes which shall be perfect in every respect I maintain that they are absolutely so. There would be no difficulty at the present moment in finding Hamburg Grapes produced by Vines which came a few years back from the same stock, but which, owing to some difference in their treatment, might be taken by good judges to be distinct varieties. Many people have no idea what a difference in quality the different systems of cultivation produce even amongst acknowledged good growers.

I have said that the month of November is the most critical time for keeping Grapes, and I will endeavour to show that the difficulties are often made greater by some widespread erroneous notions about the action of moisture on the fruit. It may be said generally that moisture will not harm the fruit if it is not allowed to condense on it, or the atmosphere allowed to become stagnant. In practice in the southern counties we cannot keep ripe Grapes safely under a temperature of 50° at this time of the year whether they are cut or are on the Vines, because we are liable at any time, even if the night is frosty, to have a change before daylight to a natural temperature even considerably higher than that, and then if the fruit had been allowed to become cold the external warm air would find its way in, and the moisture it contains would immediately condense on the berries, and we know what follows. I do not consider a dry atmosphere essential to the keeping of ripe Grapes. Growing plants need not injure them, and, above all, the Vines should on no account be stinted with water at such a time or any other; only guard against condensation by common-sense firing and airing and all will be well.

When the foliage is partly ripened the Grapes generally may be more economically kept by cutting them with as much stem as possible and placing the stems in bottles of water in the way so often described in this Journal. They must be placed in the water as quickly as possible, and be suspended in a room where they can have ventilation and the temperature can be kept for the present from falling below 50°. A room with a northern aspect is the best, as it will be more likely to be the least variable in temperature. Where a bunch has not sufficient stem behind it to allow of its being stuck in the water the reverse end may be used for the same purpose, and I think from present experience with like results. It is not necessary to retain any of the foliage on the stems which are cut with the bunches, nor to place anything besides pure water in the vessels for holding them.—WM. TAYLOR.

### SHOWY INDIAN CRESS.

On several occasions in our Journal the merits of *Tropaeolum speciosum* have been described, and why so charming a plant is not more generally cultivated it is not easy to understand. The following method of cultivation I have adopted with success. Choose an east or west aspect, then remove the old soil 1 foot deep and 1 foot wide. If the situation is not naturally well drained place 2 inches of rough drainage on the bottom, then fill up with peat or any rich light soil. Plant the roots about 1 foot apart, 3 inches deep, and 3 inches away from the wall; placing a small quantity of silver sand round each set, and be careful that the soil is kept moist by frequent sprinklings from the rose of a waterpot or syringe. When the shoots appear above ground they are very liable to be destroyed by slugs. The first year I was rewarded by a vigorous growth and a few flowers. I feared the plants would suffer last winter, but they stood safely without the least protection. They have made sturdy progress through the past unfavourable summer, having rewarded me with a grand display of their charming flowers; but the frosts early in October injured them.—NORTH YORK.

**MATERIALS FOR BUDDING.**—The material alluded to by "D. Deal," in his "French Notes," at page 312 of the Journal as "rushes," and which is inquired after by one of your correspondents, is probably the split triangular leaves of *Sparanium ramosum*, which I have seen used both in France and Jersey, and where the material finds some favour, frequently on the score of economy. The leaves cut from the ditches are gradually dried and afterwards split longitudinally, drawn tightly through the fingers, and tied in bundles ready for use. I have tried the material and find it works freely and is sufficiently strong, but was unaware of its not requiring to be removed after the buds had taken. So long, however, as good stout soft cotton can be purchased at about 1s. 12d. per pound I shall continue to use it, as it is strong, does not give, and possesses important time and labour-saving advantages during the budding season, which is frequently too contracted, the cotton from its substance and width requiring but few twists or wraps in tying; about four turns, two above and two below the eye, usually being sufficient to cover and secure an ordinary bud. Do any of your correspondents know of a better material and which can be obtained largely and cheaply? A soft jute packing string has been tried here (the Experimental Garden),

and although useful and cheap it does not work so freely nor lie so close as the cotton; it also gives slightly. The late budding season has certainly not been a contracted one, for although the work in many places from want of ripe buds could not be commenced before the first week in August, it has been continued up to the commencement of October, and here buds have been successfully inserted up to the 9th of that month, and rarely has the bark continued to run so well.—T. LAXTON, Bedford.

### THE ROSE ELECTION.

MRS. PARTINGTON says, "Comparisons are odorous," and doubtless in the matter of Roses they are much more odorous than the old lady herself meant when she uttered the sentiment. Anyway they are certainly of interest, and sometimes very useful. Early, then, in this election I wrote to Mr. Ellwanger of Rochester, New York, for his opinion of the Roses of recent introduction as regards exhibition qualities, and also for the best garden varieties. Whether or not the idea of the election suggested to Mr. Ellwanger the propriety of enlarging on his views I know not, but on both these topics he has embodied his ideas in the form of interesting papers—of which he was kind enough to send me copies—from which I shall make a few extracts. First, however, let us compare the result of our election of the newer varieties side by side with Mr. Ellwanger's list.

#### Mr. Ellwanger's List in Order of Merit.

- | English Election.          | Mr. Ellwanger's List in Order of Merit. |
|----------------------------|---|
| 1. Capitaine Christy       | 1. Comtesse de Serenye                  |
| (Duchesse Vallombrosa      | 2. Capitaine Christy                    |
| Star of Waltham            | 3. Mabel Morrison                       |
| 4. Mons. E. Y. Teas        | 4. Marie Guillot, T.                    |
| 5. A. K. Williams          | 5. Triomphe de Milan, T.                |
| 6. Abel Carrière           | 6. Marguerite Brassy                    |
| (Hippolyte Jamain          | 7. Marchioness of Exeter                |
| Sir G. Wolesey             | 8. Mons. E. Y. Teas                     |
| 9. Duke of Connaught       | 9. Jean Liabaud                         |
| 10. Comtesse de Serenye    | 10. Jean Soupert                        |
| 11. Sultan of Zanzibar     | 11. Abel Carrière                       |
| 12. Reynolds Hole          | 12. La Rosière                          |
| 13. Mrs. Baker             | 13. Magna Charta                        |
| 14. Marie Finger           | 14. Sir Garnet Wolesey                  |
| 15. Royal Standard         | 15. Sultan of Zanzibar                  |
| 16. Jean Liabaud           | 16. Star of Waltham                     |
| 17. Marguerite Brassy      | 17. Queen of Waltham                    |
| 18. Marie Coignet          | 18. Jean Ducher, T.                     |
| 19. Cheshunt Hybrid        | 19. Comte de Sembue, T.                 |
| 20. Marie L. Pernet        | 20. Hippolyte Jamain                    |
| 21. Madame Lambert, T.     | 21. Marquise de Sanina, T.              |
| 22. Madame Lacharme        | 22. Empress of India                    |
| 23. Gabriel Tournier       | 23. Madame L. Leveque                   |
| 24. Miss Hassard           | 24. Madame Marie Benton, T.             |
| 25. Jean Ducher, T.        | 25. Cheshunt Hybrid                     |
| 26. Magna Charta           | 26. The Shah                            |
| 27. Madame Prosper Langier | 27. Madame Caroline Kuster              |
| 28. Constantin Fretlakoff  | 28. Comtesse Riza du Parc, T.           |
| 29. J. B. Mill             | 29. Perle des Jardins, T.               |
| 30. Boledieu               | 30. Midle. Emma All                     |
| 31. Mrs. Laxton            | 31. Miss Hassard                        |
| 32. Avocat Duviervier      | 32. Rev. J. B. M. Camm                  |
| 33. Jean Soupert           | 33. Oxonian                             |
| 34. La Rosière             | 34. Firebrand                           |
| 35. Rev. J. B. M. Camm     | 35. Madame Lacharme                     |
| 36. Emily Laxton           | 36. Triomphe de France                  |

Now in comparing the two lists the point that strikes one is that in the English list only two Tea Roses are named, whilst the American list contains eight. This always appears to me to argue that the climate of the Tea list is more favourable to the cultivation of that class. Teas are beautiful—extra beautiful in favourable situations, and extra valuable in an exhibition point of view from their lasting qualities; but how few can grow them! and when I state that in the 148 Roses named only twenty-one Teas are mentioned by the twenty-four electors it will, I think, be felt that our English climate is not the most beneficial to the more delicate and tender specimens of that class.

Mr. Ellwanger adds a note that Marguerite Brassy, Mons. E. Y. Teas, and La Rosière are very similar to Charles Lefebvre, Sénateur Vaisse, and Prince Camille de Rohan. Of the first and third there is little doubt; I am not aware that Mons. E. Y. Teas had been charged with copying before. In his summing-up Mr. Ellwanger also notes the great advance of our English growers, and says, leaving out the Teas and Noisettes, honours are divided between the English and French, each claiming thirteen Roses; but he also adds that "the English Roses come from a few sources, while in France there are very many engaged in the production of seedling Roses." It is only necessary for me to add that the New York list is placed in order of merit, but that in the attached notes marked

praise is awarded to Cheshunt Hybrid as "not only beautiful but a new type; and a new type among Roses, if good, is what we are always ready and anxious to see."

In concluding the election of the newer exhibition varieties it is only necessary to add that the electors were twelve amateurs and twelve nurserymen, and the names of the electors are as follows:—\*Rev. C. H. Bulmer, Credenhill, Hereford; \*Mr. John Scott, Warminster; \*Mr. J. Tranter, Upper Assenden, Henley-on-Thames; \*Rev. E. N. Pochin, Barkby Vicarage, Leicester; \*Mr. E. Claxton, Ash Villa, Green Lane, Wavertree, Liverpool; \*Miss Penrice, Wilton House, Norwich; \*Mr. W. Farren, How House, Cambridge; Mr. A. G. Soames, Irnham Park, Bourne, Lincolnshire; \*Mr. T. Gravely, Cowfield, Sussex; \*Mr. J. Brown, gardener to A. J. Waterlow, Esq., Great Doods, Reigate; Mr. W. L. Palfrey, Millington, Altrincham; \*Mr. G. Baker, Holmefels, Reigate. \*Messrs. Mitchell & Sons, Piltown, Uckfield; \*Mr. Henry May, Bedale, Yorkshire; \*Mr. William Rumsey, Joyning's Nursery, Waltham Cross; \*Messrs. Bunyard & Sons, Maidstone; \*Mr. G. Prince, Oxford; \*Messrs. Kinmont & Kidd, Canterbury; \*Messrs. Paul & Son, Cheshunt; Messrs. Ewing & Co., Norwich; \*Mr. G. Davison, Hereford; \*Mr. G. W. Piper, Uckfield; \*Messrs. R. Mack & Son, Catterick Bridge; Mr. Cranston, Hereford.

Those with asterisks prefixed to their names were also voters in the garden election, together with the following cultivators of Roses:—Mr. W. Hand, 10, Marsh Street, Newcastle, Staffordshire; Mr. A. Evans, Marston, near Oxford; Rev. H. H. Dombrain, Westwell Vicarage, Ashford, Kent; Mr. R. W. Beachey, Fluders, Kingskerswell, Devon; Rev. H. Biron, Harbledon, Canterbury; Mr. S. McMaster, gardener, Bankfields, Easthorn, near Birkenhead; Mr. Joseph Hinton, Warminster; Mr. T. B. Haywood, Woodhatch, Reigate; Rev. J. M. Fuller, The Vicarage, Bexley, Kent; J. H. Pemberton, Esq., Havering-atte-Bower, near Romford; Rev. W. F. Radclyffe, Okeford Fitzpaine; Mr. W. H. Wakely, Rainham, Kent; Mr. J. Brown, Longfield, Heaton Mersey, near Manchester.

Mr. Cranston, Hereford, and Messrs. Ewing & Co., Norwich, also contributed to the garden election, and as their lists contain many Roses that are not exhibition varieties they may be usefully published.

#### Mr. Cranston's selection.

- |                                       |                                |
|---------------------------------------|--------------------------------|
| 1. Cranston's Crimson Bedder          | 16. Eclair de Jupiter          |
| 2. Mrs. Bosanquet                     | 17. Old Moss                   |
| 3. Crantiole Supérieure               | 18. Cabbage Provence           |
| 4. Souvenir de la Malmaison           | 19. Crested Moss               |
| 5. Boule de Neige                     | 20. Unique Provence            |
| 6. Général Jacqueminot                | 21. Harrisonii, Austrian       |
| 7. La France                          | 22. Persian Yellow, Austrian   |
| 8. Gloire de Dijon                    | 23. Double Scarlet Sweet Briar |
| 9. Céline Forestier, N.               | 24. Madame Plantier, H.C.      |
| 10. Fellenberg, N.                    | 25. Charles Lawson, H.B.       |
| 11. Stanwell Perpetual Scotch         | 26. Bourbon Queen              |
| 12. Bompert et Notting, Perpet'l Moss | 27. Homère, T.                 |
| 13. Crimson Superb, Perpet'l Damask   | 28. Old Crimson China          |
| 14. Aimée Vibert, N.                  | 29. De Meaux, Provence         |
| 15. Comte Bobinsky                    | 30. Blairii                    |

#### Messrs. Ewing & Co.'s selection.

- |                            |                                  |
|----------------------------|----------------------------------|
| 1. Gloire de Dijon         | 16. Marie Van Houtte, T.         |
| 2. Cheshunt Hybrid         | 17. Rubens, T.                   |
| 3. Duke of Edinburgh       | 18. Mrs. Bosanquet, China        |
| 4. Duke of Connaught       | 19. Runga, Ayrshire              |
| 5. Blush China             | 20. Boule de Nègre               |
| 6. Climbing Devonians, T.  | 21. Souvenir d'un Ami, T.        |
| 7. Céline Forestier        | 22. Souvenir de la Malmaison, D. |
| 8. Bourbon Queen           | 23. Madame C. Kuster, N.         |
| 9. La France               | 24. Aimée Vibert, N.             |
| 10. Alfred Colomb          | 25. Rêve d'Or, N.                |
| 11. Crimson China          | 26. Perle des Jardins, T.        |
| 12. John Hopper            | 27. Sombreuil, T.                |
| 13. Mdlle. Eugénie Verdier | 28. Blairii No. 2                |
| 14. Marie Baumann          | 29. Coupe d'Hobe                 |
| 15. Gabriel Tournier       | 30. Banksian                     |

To all who have assisted my grateful thanks are due.—JOSEPH HINTON, Warminster.

P.S.—I propose next week to compare the American garden varieties list with our own.—J. H.

#### NOTES FROM THE NORTH—FORGLEN HOUSE.

A VERY fine specimen of *Cycas revoluta* has flowered this season in the temperate house at Forglon House, Banffshire, the residence of Sir R. T. Abercromby, Bart. Twelve years ago the writer recollects shifting this fine plant into a 6-inch pot; it was then about 15 inches wide, and had a crown about the size of a Roman Hyacinth. To-day it measures from the top of the tab 4 feet 9 inches high, 8 feet 6 inches spread of crown; the trunk is 2 feet 7 inches in height and 3 feet

6 inches in girth, with nine courses of leaves. The plant has a very handsome appearance, and bears testimony to the cultural care and skill of Mr. Cameron, the able gardener here, who has been entrusted with the superintendence of this fine place and its valuable collection of plants (probably the most complete in the north of Scotland) for well nigh twenty years. The backward season has told heavily against outdoor crops here as elsewhere. Wall fruit, with the exception of Cherries, will not ripen. Small fruits have been very abundant, but are a month or five weeks later than usual.

In the vineries heavy crops are the rule, yet a monster bunch here and there is to be seen one of which (I forget the variety), measured 18 inches across the shoulder and the same in length, with good colour, and likely to finish well. The Peach trees are also heavily cropped, and the fruit is of first quality. In the orchard house heavy crops are ripening off. Melons and Cucumbers are grown in neat low span-roofed houses, such as some gardeners I know would envy. The crops are excellent, Melons being specially fine. The flower garden is extensive, and requires many thousands of plants to be raised yearly for its adornment. Violas do well here, and are grown in large numbers. There is a fine collection of Roses which do very well. Altogether this is one of the very finest places in the county, and gives evidence in every nook and corner of much care and forethought in its management.—TRAVELLER.

#### STRAWBERRY CULTURE IN POTS FROM NOVEMBER TO MAY.

IT may be remarked that some of the earliest-forced plants of last spring are fruiting well now, and that the autumn fruiting of Strawberries in pots is a much simpler matter than some believe. Most Strawberry plants for winter and spring forcing will yet be standing in the open air. The season has been very unfavourable to their growth, and now the weather is much against the plants becoming thoroughly matured. Altogether no great results should be expected from Strawberries in the spring of 1880. Still Strawberry plants may be considerably improved during the next three weeks.

The best way to assist plants at the present time is to stand them out in a fully exposed position; keep the soil in the pots free from weeds and decayed leaves, and pinch off all runners as soon as they appear. Liquid manure, which may not previously have been liberally applied, should now be given at every other watering, and at the same time never allow them to suffer through deficient supplies of water. Drying off Strawberry plants in pots may be a successful practice with some, but keeping them constantly wet is at least an equally successful way of treating them, and in our opinion the most advantageous. Dryness at the root always causes many of the young fibres to wither and die. Our main points of culture so far may again be repeated: Expose the plants as much as possible to the sun to mature the crowns. Avoid placing them under glass or any other protection until they are removed to their forcing quarters; and during the whole time they are in pots, while resting or growing, always keep the soil moist.

Respecting forcing, few begin this operation until December, but their requirements then are just the same as in the following months, only the earlier in the season forcing is commenced the more difficult it is to accomplish. However, whether in December, January, or any other month, the plants must not be placed in too great a heat at first; 60° or 65° by day and 50° by night is sufficient to start them robustly. Some cultivators plunge the pots in a slight bottom heat to start the plants into growth. We never do so, but rather try to avoid it, as this, like placing them under glass in autumn, must be followed up if it is wished to avoid giving them a check. When the plants are placed in the above temperatures in December, January, or February little signs of starting into growth will be visible for a considerable time, but they must be well watered during this time. As soon as the flowers are visible the temperature may be raised 5°.

Any kind of house where heat can be had to the extent named will do for their culture. Special Strawberry houses are the exception, not the rule. We force some of our plants in a Pine house, others in plant pits or early vineries—always, however, preferring the house, where red spider will do least harm, as Strawberries are rather subject to these pests. Clean water should only be used until the flower buds appear, then give liquid manure at every other watering. A moist atmosphere will assist the plants considerably in growth, but during the time they are in bloom a rather dry air suits the setting or



forming of the fruit. In dull weather when but little air can be admitted it is a good plan to rub the flowers gently over with a feather to insure the fruits setting well.

When each plant is bearing three or more dozen fruits about the size of small peas the smallest and worst formed may be clipped out, leaving from twelve to twenty of the best to form the crop. The time required from when the plants were placed in heat until the fruit is ripe depends entirely on the state the plants were in before forcing was commenced, the heat that was applied to them, and the weather. Well-matured plants and plenty of sunshine produce fruit rapidly. A number of plants placed in heat every three weeks will keep up a good succession of fruit according to demand.—A KITCHEN GARDENER.

### VINES IN POTS—STOCKS—GOLDEN QUEEN.

It is very gratifying to me to find that, with one notable exception, my practice given under this heading on page 263 is approved of by such an able and experienced grower as Mr. Gilbert undoubtedly is. He, however, does not agree with me in following what I am inclined to think a very important detail—viz., planting out the Vines in prepared pits in preference to fruiting them in pots. One trial only seemed to convince him of this practice being unsatisfactory; but I think that should he again give the plan a trial, looking as closely after the watering as he undoubtedly does those he fruits in pots, the result will be much more satisfactory. Assistants as a rule are apt to be negligent in the matter of watering borders; in fact this should not be left to their judgment, however enthusiastic and painstaking they may be. I do not say deficiency of water was the positive cause of failure, but very probably it was.

If Mr. Gilbert has not already grown Pearson's Golden Queen in his succession pot viney, I strongly advise him to try it in good numbers. I have found it to answer remarkably well grown to succeed the earlier varieties. Both the colour and flavour is improved under this treatment. Black Alicante forms a capital companion for it, and this, too, is improved in flavour by the treatment. The one weak point in Black Alicante is its want of quality, and for this reason it is but little grown in many good gardens. To have it in perfection it should either be grown with the Muscats or receive similar treatment. Both the Alicante and other late varieties may ripen, or rather colour well, in a house without fire heat providing they are started early. But the question is, Will they be fit for the table? I think not, especially this season, as neither Black Hamburg nor Foster's Seedling are good, although to all appearances quite ripe, being in reality very poor and watery. This is not the only drawback, as from the fact of saccharine matter being almost absent they will keep badly.

"A KITCHEN GARDENER" on page 304, after stating that Black Alicante is altogether a failure under cool treatment, mentions that he has lately inarched Golden Queen on all of them, and "expects better results." I hope he will not be disappointed, but I very much question if he will not. I saw the Golden Queen at Mr. Pearson's, Chilwell Nurseries, before it was distributed. It was fruiting with a number of other seedlings, all of which were the result, if I remember rightly, of a cross between the Black Alicante and Ferdinand de Lesseps. It resembles the former in the shape of bunch and berry, and the latter in colour and vigour, its flavour being a compound between the two; consequently it is a stronger grower than the Black Alicante, and is also somewhat, though not much, earlier. If I grafted or inarched on either of its parents it would be the Ferdinand de Lesseps. To have it, however, good in a cool house it should have for a stock a good early variety, none being more suitable than Foster's Seedling. The best bunches I have yet seen of it were grown on this stock by Mr. Atkins of Lockinge, who, it will be remembered, secured the valuable first prize offered in 1878 by the raisers. Golden Queen when well grown is a very handsome and desirable variety, but badly grown it is a poor colourless Grape, giving pleasure to no one.—W. IGGULDEN.

**NATIONAL ROSE SOCIETY—SPECIAL PRIZES.**—I am happy to announce that those generous lovers of the Rose, Mr. J. and Mr. T. Hollingworth of Turkey Court, Maidstone, offer the following prizes to be competed for at the National Rose Society's Exhibition at the Crystal Palace:—John Hollingworth, Esq., a cup, value ten guineas, for the best stand in seventy-tuos,

for nurserymen; and T. Hollingworth, Esq., a cup, value six guineas, for the best eighteen Teas and Noisettes, also for nurserymen.—D., Deal.

### SHEFFIELD GARDENS AND GARDENERS.—No. 4.

FROM another central point—the Botanic Gardens—nearer the town and less breezy than the district previously referred, some very good examples of gardening are easily reached. One or two of these may be briefly noticed; but it may be appropriate first to glance at the

#### BOTANIC GARDENS.

These are about eighteen acres in extent, and contain some fine ranges of glass. The conservatories, which are spacious structures, have a central and two end domes, and as viewed from the terrace walk the effect is rather imposing, the length of the range being 340 feet. The pavilion is 120 feet long, and there is a range of houses still longer for preparing plants for the conservatory and flower garden, and a few other structures devoted to plant culture. The grounds contain a very good assortment of trees and shrubs and an old-fashioned rosery; but the chief feature of interest is the principal glass range. Under the first dome is a fine tree of *Acacia saligna*, the spreading limbs of which occupy much space—it is quite a timber tree; then a long compartment is devoted to Palms, Tree Ferns, &c., amongst which are fine masses of *Woodwardia radicans*. Over the pathway traversing the front of the range there are at intervals arches of such old Fuchsias as *serratifolia*, *corallina*, *gracilis*, *Riccartoni*, &c., very old plants, or trees, laden with elegant flowers, which are seen to great advantage. The space beneath the central dome is occupied with grand Palms, *Phoenix dactylifera* and *P. farinifera* being of great size and in superb condition. A remarkable *Indiarubber Tree*, *Ficus indica*, attracts attention by the roots that have issued from the stem some 20 feet above the ground, which they have long since reached and entered, and now resemble large props supporting the specimen. These Palms, &c., were planted out by the present Curator—Mr. Ewing—some years ago, and it is evident they have received the best attention throughout their career. A long division of flowering plants leads to the other domed division, the centre of which is occupied by a tank devoted to the culture of the Victoria regia. The plant flourishes well here, producing noble leaves and flowers, and the structure is rendered additionally ornamental by specimen Palms and other fine-foliated plants elevated at intervals above the surface of the water. In the several structures behind the chief range is a diversified collection of plants—Filix Ferns, well grown, *Arctostaphylos*, the newer *Crotons*, *Colocassas*, *Dra-cenas*, &c., with many other plants that are old and rare rather than new, for all are cherished by Mr. Ewing, who appears to combine the ancient with the modern, and thus renders the gardens interesting and instructive as well as attractive. In the grounds carpet bedding is well carried out for the gratification of the visitors, and the entire establishment is conducted with the skill and sound judgment that the Curator is so well able to exercise. That his services are appreciated, and justly so, is evident by the fact that after a term of twenty-one years additional means are being provided to aid him in his work, and something more substantial than official and public approbation is being granted him for the duties he has so long, well, and faithfully performed. The pleasure of a visit to the gardens is considerably enhanced by the generosity and courtesy of Mr. Ewing, who is highly esteemed by all who know him.

#### OAKHOLME.

Almost close to the Botanic Gardens is this, the residence of T. Wilson, Esq., and nowhere about Sheffield are plants more skilfully grown than they are here by Mr. Hannah. Some of the specimens are worthy of a place at the best exhibitions in the kingdom, and all are in the highest possible condition. There is a very fine range of glass, the houses being light and spacious, with ridge-and-furrow roofs. The fine-foliated plants are in superb condition. *Croton irregularis* as it is commonly seen is not particularly attractive, but to see it as it is at Oakholme, 5 feet high and 4 through, and without a falling point, it cannot fail to command approbation. *C. pictus* is much larger, yet equally well furnished and finely coloured—one of the finest plants of a really good *Croton* to be seen in the country. Some of the other older forms, such as *C. variegatum*, are in splendid condition; while many of the newer sorts, though necessarily smaller, are in the same excellent health and colour.

In admirable contrast are stately examples of *Spherygyne speciosa* and *Cyanophyllum magnificum*, plants that are not so often seen in their best condition as they ought to be. *Dracenas* are also well grown; and especially noticeable on the side stages are some admirably grown *Sonerilas*. The beautiful *Begonia imperialis*, with its plush velvet-like foliage, is rarely seen so fresh and good as here, and few dwarf-growing ornamental-foliaged plants are better worth growing. A collection of Orchids is being established, Vines having been removed from one of the divisions to make room for the plants, which were looking extremely well, the *Calanthes* being very attractive. One of the houses is devoted to Ferns and *Selaginellas*, and as grown in a natural manner on rocky mounds and interspersed with *Begonias* and other suitable plants a charming effect was produced. The health and cleanliness of all the plants and the neatness of the houses were remarkable. The grounds outside—the spacious lawns—appeared equally well cared for, and afforded abundant testimony of the industry and ability of the gardener. Mr. Hannah was a pupil of Mr. Ewing, and is a credit to him and a worthy example of Sheffield gardeners.

#### ASHGROVE.

Only a few minutes' walk from Oakholme is this the residence of C. H. Stone, Esq., a gentleman who is evidently a great admirer of plants and a liberal purchaser of what is good amongst them. This garden is small, but is almost filled with well-constructed and light houses, and these houses are filled with well-selected plants. These are not large, as they are mostly in a young state, but are in capital condition. Mr. Fellows being apparently no novice in plant culture. In beautiful condition was *Rhododendron Princess Royal*, one of Messrs. Veitch's hybrids of the *R. jasminiflorum* type—Perpetual-flowering *Rhododendrons* I have heard them called, and the name is appropriate, for they appear to flower at all periods of the year, and in the different varieties are extremely attractive, and will be certain to become highly popular for various decorative purposes. Several of the newer *Crotons* and *Dracenas* of Messrs. Veitch, Williams, and Wills are being established, and Messrs. Veitch's striking *Alocasias Veitchii* and *Warroqueanum* are in a most promising state. Orchids are represented by several healthy specimens, and the newest varieties of Dr. Denny's and Mr. Pearson's *Zonal Pelargoniums* are included in the collection. *Camellias* and *Azaleas*, with *Rhododendron ciliatum*, are in as good health as can be desired, and red and white *Lapagerias* are making excellent growth and producing their beautiful flowers freely. The object of Mr. Stone appears to be to have plants that are really good, and his gardener's pleasure, as well as duty, appears to be to grow them well: hence the satisfactory condition of the collection in this small but enjoyable garden.—J. W.

#### GLAZING WITHOUT TOP PUTTY.

THIS system of glazing is not adopted so generally as I believe it deserves. One trial, I am confident, will convince anyone of its superiority provided certain conditions are carefully attended to. Repairs will be less, the appearance is very little affected, and the house will prove more durable than when top putty is used.

My employer has recently erected a range of houses nearly 200 feet in length, and, except for the upright portions, top putty has been entirely dispensed with. The past season has given ample opportunity of testing the resistance of the system to wind and wet, and nothing could be more satisfactory. The whole has proved to be thoroughly watertight. The wood having been well painted twice, special care was taken to place the bottom putty in regular layers, using it liberally and of the best quality, pressing the glass down very firmly upon it, and secured with four small sprigs driven into the sashbars, two at the lower end of each square, and two midway between top and bottom. The paint over this was allowed to cover fully an equal breadth of glass on the top as that resting on the rebates below. There being so little putty exposed water cannot find a lodgment in the numerous small crevices which are too often to be found when top putty is used; and however minute they may be water is certain to get in, but does not quickly evaporate, and so for a long time the wood will be almost continually wet, causing it to decay and the putty to peel off.

In support of the above I may mention a house in this locality (built with several others some nine or ten years since), that was glazed without top putty. This house at the

present time is in a better state of preservation, has cost less for repairs, and throughout continued more efficient than those glazed in the ordinary way.—C. MAXTED.

#### THE ROSE SEASON OF 1879—A RETROSPECT.

NEVER, perhaps, since the Rose became so generally grown and so continuously exhibited has such a season as the past been experienced. Growers, exhibitors, managers of Rose shows, and judges have all been puzzled and at their wit's end. Growers, for they have seen wet and wind, frost and cold, injuring their plants, and well nigh taking all the pleasure out of their garden; exhibitors, for they have not known when to calculate on their flowers being ready, or to preserve them in any degree of freshness when they were so; managers, for they have had to shift and change the days of exhibition, some even twice, and ultimately no better off for doing so; judges, for Roses have been so utterly out of character, and in the great majority of cases so indifferent, that it has not been an easy matter for them, it being far more difficult to judge bad and indifferent stands than good ones.

In such a season, therefore, one's retrospect must be of a very different character to what it has usually been; and although I have, either in my capacity as Hon. Sec. of the National Rose Society or as Judge, attended a goodly number of Rose shows, and have only been hindered from attending more from the fact that I could not be in two places at once; yet whether it has been north or south, east or west, there has been something to disappoint one in most of them. As, however, I have recorded my impressions of the various exhibitions at which I have been present in former numbers of the Journal I shall not enter into any of these details again, but endeavour to draw a few conclusions from a general survey of the field. Now that the smoke has cleared away and the combatants have returned to winter quarters one is better able to judge of results than when we were in the thick of the fray.

I think one most gratifying result has been the increased and increasing influence of the National Rose Society. During the past season I have been called on to assist by advice and counsel in the formation of these Rose societies avowedly on its lines, and in each case a great deal of enthusiasm was shown and a substantial success achieved notwithstanding the adverse circumstances of the season. The rules for judging issued by the Society have been taken as the standard authority on the subject, while the "Hints on Rose-Growing," which have been widely distributed, have been much appreciated. The Society itself has now become established on what we may hope is a firm basis. The unfavourable season relieved somewhat of the pressure on its funds and it is now entirely free of debt, while the zeal displayed on its behalf is evidently increasing. The special prizes already announced and those referred to in another column strongly evidence this; and I may, without egotism I hope, refer to another proof—the honourable reception given to me as one of its Hon. Secretaries at Brie-Comte-Robert and my election as President of the Jury, both of which were due to this and not to any personal feeling, as I was unknown to most of the members. It was simply a tribute to the high position attained by the National Society in the estimation of foreign Rose-growers.

The increasing interest in the Rose itself, the extension of its growth and exhibition, have also come clearly out in the past season. No adverse circumstances seem to be able to damp this. Growers for sale multiply, old-established firms increase their Rose grounds, and to the satisfaction of the amateur prices come down. Many new hands are to be found in our lists of exhibitors, while the older ones still put forth their energies to maintain the position they have already won; and although there must have been very bitter disappointment to a great many exhibitors through the backwardness of the season, yet it is pleasant to find that those who have suffered most are amongst the most eager to show their determination not to give in. We may certainly say that no flower has been able to attract to itself alone so large and enthusiastic a number of admirers as that which is deservedly called the queen of flowers.

There can be no good gained by disguising the fact that Rose exhibitions this year have been disappointing. In other seasons we have been able to look back on some special stands on which we can dwell with pleasure as something super-excellent—a box of Teas, a stand of twenty-four or twelve of some especial Rose; but in this season my memory at least dwells upon nothing of this character. I did not see at Norwich Mr.

Baker's stand of forty-eight which so excited the wonder and admiration of Mr. D. T. Fish; but the only stand which dwells in my memory as of superexcellent character was one shown, not at a Rose show, but at Taunton on August 14th by Mr. George Prince of Oxford. It was a box of forty-eight, and a better one it has never been my lot to see. All who saw it will remember, however, with admiration the wonderful bloom of Niphotos shown by Mr. Jowitt of Hereford at the National exhibition at the Crystal Palace; it was a veritable roc's egg in size, and as pure in its white as it was possible for a Rose to be.

The season, so indifferent in every respect, of course was unfavourable for the production of new Roses, and never have I seen so few brought forward. Of the much-spoken-of Stapleford Roses I do not remember to have seen any exhibited except one small bloom of Duke of Connaught. It is satisfactory to find that English-raised Roses—not Roses bought in France and christened and sent out in England, but really English-raised Roses—have been so successful. Some of the best blooms of new Roses that I can call to mind are of this character. Mrs. Laxton, Duchess of Bedford, and Harrison Weir will fully maintain the character of their raisers. There are other good ones, but I am only recording those which I have seen in exhibition stands. Not one of the Roses sent out in France last autumn has made anything like a sensation, indeed I hardly recollect seeing one at which one would come to look twice; but there is one of the forthcoming English Roses, which will be, I doubt not, a great favourite—Messrs. Paul & Son's Duke of Teck, a brilliant scarlet flower in the style of Duke of Edinburgh. I saw it exhibited at Reigate, when it struck me as the most dazzling flower I had ever seen, and this in a season when so many of our brightest flowers were shaded. It is a Rose of very great promise. Madame Lambert and Madame Nabonnand of the previous year have been shown well, and the former especially promises to be a valuable addition to this beautiful class.

Questions have arisen which will call for a solution in some form or other—the “too much alike Roses,” the placing of Cheshunt Hybrid and other similar Roses amongst Teas. They have been largely discussed at our exhibitions, the National Society has been urged to take action on them and settle the points, and perhaps ere long it may do so. We are drawing to the close of this most unpropitious year. Rosarians are busy arranging their beds and planting for another season. They may do so hopefully, I should think, for certainly they cannot expect to see such another season as this. Well, the fine autumn weather now experienced in many places must be favourable. May they all draw prizes and no blanks, and next season have a different tale to tell from this.—D., Deal.

### PEARS AND PEACHES.

SUMMER Beurré d'Arenberg proves to be a valuable addition to our autumn Pears, and well sustains the high character given it in the last edition of the “Fruit Manual.” I have a vigorous young tree of it, an oblique cordon, which bore some fruit this year for the first time. It was not ripe till the second week in October, but that was owing to the dull cold summer, all fruit being from three weeks to a month later in ripening than usual. “Flesh yellowish, very buttery, tender, melting, and very juicy, sweet, richly flavoured, and with a musky aroma,” says the “Fruit Manual.” True every word of it, say I; and gladly add that even in this year of undersized fruit it proves to be of medium rather than a small size.

“The best feature in the garden,” said my friend Mr. Wright as we were looking at the Pear wall a few weeks ago. The wall runs north and south, has palmette verriers on the west side, all of them just coming into full bearing; and oblique cordons, comprising a selection of sixty to seventy varieties, on the east side. Several of the cordons have reached the top of the wall, all are forming fruiting spurs, and so many are in bearing that they will afford some three hundred fruits for the dessert this season. The palmette verriers bear bushels of fruits—the cordons a few dozens, which are really more useful than the bushels, serving as they do to maintain a constant and varied supply of really choice fruit for table. Who would be without some cordons? Who need be without some? They are planted 18 inches apart, have a single stem, are trained to an angle of 45°, and answer equally well on a low wall or a lofty building.

Several inquiries we have had lately about suitable varieties of Peaches and Nectarines for culture under glass tend to show the prevalence of an erroneous impression that all of them

will not answer under glass. Experience shows that every kind of known excellence in the open air proves equally good in a Peach house; the only moot point in the matter being this—Are those varieties which fail to ripen fruit in the open air worthy of space under glass?—EDWARD LUCKHURST.

### ECLIPSE CAULIFLOWER.

MR. BARDNEY, in describing the above as “a very useful variety,” has hardly given sufficient praise to it. I can speak in the highest terms of it. I have submitted for your opinion four heads, and as to the variety producing but “few leaves,” I cannot quite agree with Mr. Bardney. My experience of it both last year and this is, that it is sufficiently self-protecting till the heads are too large for the parlour table; but leaving all differences of opinion out of the question, so far as I have seen of it, it is the best Cauliflower for late summer and autumn use in cultivation. I grow it extensively, but it is now nearly over with me, and is succeeded by late-sown Early London Cauliflower, followed by Veitch's Autumn Protecting Broccoli, which is equally good in its season as the Eclipse Cauliflower.—JOHN GADD, Thorndon Hall.

[The Cauliflowers sent were extremely fine, the large heads being white, close, and solid; and the smaller, about 3 inches in diameter, being quite hidden among the mass of surrounding leaves.—EDS.]

### FRUIT SHOW AT HEREFORD.

OCTOBER 29TH AND 30TH.

UNDER the auspices of the Pomona Committee of the Woolhope Club by far the greatest Exhibition of Apples and Pears of the year was held on the above dates in the Museum and Woolhope rooms, which were crowded to their utmost capacity by the contributions of cultivators in Herefordshire, Gloucestershire, Berkshire, Worcestershire, and Kent, together with an extensive and interesting display from France. As was inevitable after such a cold, wet, and sunless season the fruit was generally small, yet notwithstanding there were many splendid dishes exhibited, notably by Mr. Haycock and Mr. Lewis Killick from Kent, and Sir Henry Scudamore Stanhope, the leading exhibitor of Herefordshire, while the French fruit was remarkable for its fine size and colour.

The superiority of the Kentish fruit both in size and colour over that of the local examples was very manifest. The climate of Kent is more genial than that of Herefordshire, and to this fact the brightness of colour and generally handsome appearance of Mr. Haycock's fruit was attributed; but the result is due to something more than climate—namely to young trees and superior culture. If the same skilled attention were bestowed on young trees in Herefordshire as is apparent at Barham Court, the splendid soil of the famous cider county would in a great degree compensate for slight climatic disadvantages. So far as we have seen not nearly the amount of cultural care is given to the producing of superior specimens in Herefordshire that is exercised in Kent; and the products of the first-named county are chiefly the results of not special but ordinary cultivation. The achievements of Herefordshire growers are great, but they would be greater from an exhibition point of view if young trees were planted more freely in selected positions, and special attention given to the several cultural details that contribute so powerfully to the success of those who adopt them. Yet after all climate told its tale at the Show under notice, for while the Kentish was superior to the locally grown fruit, the former was in turn excelled by the examples from “sunny France,” but in that case we doubt not that special care and superior culture had been largely exercised in producing the specimens.

The competition was arranged in five divisions, the first being devoted to professional men (nurserymen or market gardeners), in which prizes were given for dessert or culinary Apples and Pears; the second to amateurs, which was subdivided into five classes; the third was a free division, being, as the schedule comprehensively put it, “open to all and from anywhere;” the fourth was devoted to vintage or cider and perry fruit, there being nine classes; and the fifth division was devoted to cottagers, the condition being that their rental should not exceed £7 per annum, and they were to be recommended by a subscriber, a member of the Woolhope Club, the clergyman of the parish, or their employers. Altogether (excluding the cottagers' division, which did not fill), there were thirty-eight classes, which comprised the staging of nearly two thousand plates of fruit.

The professional class did not evoke a very extensive competition, the competitors being Mr. Lewis Killick, Maidstone; Mr. Griffiths, Tillington Nurseries, Hereford; Mr. Barnes, Gloucester; and Mr. Grove, Tupsley, Hereford.

The Kent producer only showed in one class—viz., that for collections of culinary Apples of not less than ten varieties, the

other exhibitor in the class being Mr. Barnes of Gloucester. The superiority of the Kent over the Gloucester fruit was very marked, the Kent Apples being at least half as large again, and much clearer in the skin and purer in colour. Mr. Killick's variety included Lord Suffield (particularly fine), Loddington Seedling of Stone's Apple, Warner's King, Bedfordshire Foundling, Cox's Pomona, Lord Derby, Peasegood's Nonpareil, Tower of Glamis, and Ecklinville Seedling; while Mr. Barnes's collection included Loddington's Monstrous, Flanders Pippin, Caraway Russet, Kentish Pippin, Devonshire Queen, Broadend, &c. Mr. Griffiths of Tillington was successful in the class for dessert Apples, Mr. Barnes of Gloucester being, as in the culinary fruit, second. In the professional class for dessert Pears Mr. Barnes was first, and Mr. Grove of Tupeley second; Mr. Barnes's collection including Phelps's Bergamot, Bishop's Thumb, Napoleon III., Vicar of Winkfield, Beurre Quetelet (Comte de Lamy), Duchesse d'Angoulême, Marie Louise, &c.; Mr. Grove's collection comprising among others Brown Beurré, Beurré de Capiaumont, Marie Louise, &c.

In Class 4, for ordinary Pears, no professional competed. Mr. Taylor, Sherdington, was placed first with Uvedale's St. Germain, weight 2 lbs. 12 oz.; Dr. Chapman following with Catillac, 2 lbs. 6 oz., and Rev. W. H. Tweed being third with the same variety, 2 lbs. 4 oz. The professional division was chiefly remarkable for Mr. Lewis Killick's splendid collection of large, finely formed, and well-coloured culinary fruit.

The amateur division (for gentlemen's gardens or gentlemen who do not keep gardeners) brought out a splendid competition, the principal exhibitors being Mr. Haycock, gardener to Mr. D. Leigh of Barham Court near Maidstone, Kent, and Sir Henry Scudamore-Stanhope, Bart., of Holme Lacy, Herefordshire. Prominent among the other exhibitors and prizewinners were Mr. Shingles, gardener to Earl Ducie; Mr. H. Higgins, Thinghill; Mr. Taylor, Sherdington, Oxen; Cheltenham; Mr. C. Williams, gardener to Mr. Joseph Pulley, Lower Eaton, Herefordshire; and Mr. Froggatt, gardener to Major Wegg-Prosser, Belmont, Herefordshire. The feature of this part of the Show was Mr. Haycock's fruit, which secured for the exhibitor four first prizes out of five; and the collections sent by Sir Henry Scudamore-Stanhope, who secured one first, two seconds, and a third. Mr. Haycock's fruit was, a local paper says, "really magnificent," but we have seen him stage much finer. Sir Henry Scudamore-Stanhope, one of the most competent amateur pomologists in the kingdom, was a close second, and with the other competitors admirably sustained the honour of the native pomona. Mr. Haycock's first-prize collection of dessert fruit comprised the Old Nonpareil, White Nonpareil, Duchess of Oldenburgh, Reine de Grise, Sykes House Russet, Golden Pippin, Cox's Orange Pippin, Keddlestone Pippin, King of the Pippins, Ribston Pippin, Reine de Canada, Nonpareil, and Lady Derby. Sir Henry Stanhope's Apples included Count Pendu Plat, King of the Pippins, Mother, Winter Pomeroy, Golden Reine, Margil, Ribston Pippin, Duke of Devonshire, Reine de Canada, Pomeroy, Cornish Gilliflower, and Claygate Pearmain. In the class for not less than six varieties of culinary Apples Mr. Haycock was first again, the varieties being Reine de Canada, Bedfordshire Foundling, Lord Suffield, Small's Admirable, Calville Blanche, Dumelow's Seedling, Washington, Belle Josephine, Hawthornden, Belle Dubois (Gloria Mundi), Northern Greeting, and Emperor Alexander. Mr. Higgins was second with a very meritorious collection, comprising Blenheim Pippin, Warner's King, Dumelow's Seedling, Alfriston, Emperor Alexander, and Lord Suffield. Sir H. Stanhope (third) had in his collection Cox's Pomona, Dumelow's Seedling, Emperor Alexander, Lord Suffield, Ecklinville Seedling, Gloria Mundi, Mère de Ménéage, Warner's King, Bedfordshire Foundling, Tower of Glamis, Blenheim Orange, and Striped Beesing.

Of Pears in the amateur division Mr. Haycock secured first honours for dessert fruit with Doyenné Boussoch, Marie Benoist, Beurré Hardy, Pitmaston Duchess, Duchesse d'Angoulême, General Todtleben, Beurré de Capiaumont, and other good varieties. Sir Henry Stanhope was second with some fine fruit, including Beurré Hardy, Beurré d'Amanlie, Duchesse d'Angoulême, Gansel's Bergamot, Althorp Orsanne, Beurré Clairgeau, Doyenné Boussoch, General Todtleben, Beurré Bachelier, &c. Mr. Cox, gardener to Earl Beauchamp, was third in this class. Mr. Taylor, gardener to Mr. Strangeways, Sherdington, Cheltenham, and Mr. Shingles, gardener to Earl Ducie, were highly commended; and Mr. Ward, gardener to Lady Emily Foley, was commended. In the class for dessert Pears, not less than three varieties, Sir Henry Stanhope (Mr. Young, gardener) worthily won the premier position, his varieties being Duchesse d'Angoulême, General Todtleben, Doyenné Boussoch (very fine), Beurré Superfin, Beurré Hardy, Gansel's Bergamot, and Délices d'Hardenpont. Mr. Williams, gardener to Joseph Pulley, Esq., Lower Eaton, was second, and Mr. Ward, gardener to Lady Emily Foley, third. Mr. Williams showed Hacon's Incomparable, Beurré Clairgeau, Beurré Superfin, Beurré Bachelier; and Mr. Ward staged Marie Louise, Maréchal de Cour, Beurré Bosc, Louise Bonne de Jersey, Napoléon, Brown Beurré, Colmar d'Arenberg, and Gansel's Bergamot. In the next class, for ordinary Pears, not less than three varieties on plates of three each, Mr. Haycock was again to the fore with Catillac,

General Todtleben, and Bellissime d'Hiver; Mr. Taylor, Sherdington, Cheltenham, being second with Vicar of Winkfield, Catillac, Uvedale's St. Germain, and other varieties. The third prize was awarded to Mr. Froggatt, gardener to Major Wegg-Prosser, who showed Beurré Diel, Uvedale's St. Germain, and Catillac.

In the division "open to all, and from anywhere," prizes were given for stipulated varieties of dessert Apples for flavour, and for kitchen Apples for size, weight, and quality. Mr. Haycock was the premier prizewinner in these classes, taking eight firsts out of nineteen, and three seconds. The only other prizetaker securing more than one first prize in these classes were Sir Henry Stanhope and Mr. F. Bodenham, who took two each, Sir Henry being for Beurré Hardy and Maréchal de Cour Pears, very fine; the other winners of first prizes were Mr. Lewis Killick, Mr. W. Stallard, Aylestone Hill, Mr. John Watkins, Mr. Cox, Madresfield Court, Rev. H. M. Ridley, Bishopstone, Mr. C. Ross, Welford Park, Newbury, and Mr. Taylor, Sherdington. In the class for culinary Apples Mr. Haycock's first-prize six specimens of Belle Dubois or Gloria Mundi weighed 5 lbs. 10½ oz.; Mr. H. Higgins was second with Warner's King, weight 4 lbs. 11 oz.; and Mr. Taylor, Sherdington, third with the same variety, weight 4 lbs. 10 oz. The first prize for dessert Pears for present flavour was won by Mr. C. Ross with the Seckle; the second by Mr. Haycock with Pitmaston Duchess; and the third by Dr. Chapman with Louise Bonne de Jersey (orchard grown). In the class for new Apples Mr. C. Ross was among the competitors with a good serviceable Apple of middle size, and about which the raiser says—"It was raised from a pip taken from a very fine specimen of Beauré Nonpareil, and sown in the spring of 1868. It was planted out in 1870, and transplanted in 1874. It bore a fruit in 1878, which was cooked in January, 1879. This year it has borne forty fruit, some of which were cooked in September. On both occasions it was highly appreciated at my employer's table. It is a strong grower and likely to be a good bearer, it being now full of fruit buds for next year." Some were sent for trial by cooking, as well as those for exhibition. Mr. H. H. Ballard, Homend, Ledbury, also sent a new variety of Pippin of the same kind that he sent to the Show last year—viz., Baylis's Kernel, which he considers a valuable addition to dessert Apples, as the tree is free from canker, and the fruit is in use from Christmas till March.

The French Pears and Apples were not exhibited for competition. They were placed by themselves on the table at the end of the Museum room. They were sent by Monsieur O. Benoit of Havre for the most part; but others had also been procured from M. Paillet, nurseryman of Sceaux, near Paris. Belle Angvine Pears (Uvedale's St. Germain), weighed over a pound each, and there were some grand specimens of Bergamotte Espere, Duchesse d'Angoulême, Beurré Bachelier, &c. M. Benoit sent 106 varieties of Pears, and thirty different sorts of Apples, which contributed materially to the interest of the Exhibition. Messrs. J. C. Wheeler & Sons of Gloucester sent a large and meritorious collection of dessert and culinary Apples and Pears, which received the high commendation of the Judges, and some old works on pomology imparted interest to the Exhibition.

In contributing a few notes on this Show, the finest of its kind seen in England this year, I must congratulate the Pomona Committee of the Woolhope Club on the successful result of their efforts, and there is no doubt while the Committee contains such energetic members as Dr. Bull, the Rev. C. H. Bulmer, and many others the Exhibition will increase in popularity yearly. On my first entry into the rooms containing the exhibits I was greatly struck by their appearance as a whole, giving promise, which was afterwards borne out, of a very interesting study of the different varieties. The Apple of the Show was certainly Warner's King, a gratifying fact to myself, as I have consistently advocated its being planted for the last two or three years. As it is now the planting season I recommend any of your readers who have a spare corner in their gardens to plant a tree or two of this variety. If later sorts are also required, Tower of Glamis and Yorkshire Greening I have found to crop well. Although Warner's King was surpassed in weight by Mr. Haycock's splendid dish of Belle Dubois (Gloria Mundi) it is a better all-round Apple. Warner's King will grow everywhere, a remark which will not apply to Belle Dubois. The next three plates in the competition were all Warner's King, and many other dishes of this Apple were also shown in this class, proving that it is largely cultivated in Herefordshire. Mr. Haycock's dish of six fruits of Belle Dubois weighed 5 lbs. 10½ oz., which is good considering that Apples are one-fifth less in size this year than usual. The whole of Mr. Haycock's collection was remarkably fine both for size, colour, and shape. At the same time for the last two qualities the Apples of Mr. Higgins and the Pears of Sir Henry Scudamore-Stanhope were equally good.

It seemed to be a prevalent opinion at the Meeting that the climate of Kent is more suitable for the development of fruit than that of Herefordshire. Of one thing I am certain, our soil is not nearly so good as that around Hereford. The deep rich red loam that seems the staple soil of the district is precisely suited for fruit trees, especially Pears. This land, with the subsoil of red sand-

stone which can be seen protruding in huge boulders in the park at Holme Lacy, would produce Apples equal in size and superior in colour to any that I know of in Kent.

I was greatly astonished to find so few good fruit plantations in Herefordshire, and these are confined to a few enthusiastic amateurs. The cider orchards are chiefly, too, in the flat ground. I noticed many sloping hills suitable in every way for planting, and I should certainly recommend these in preference to the low grounds at present in use. At the same time I think many of the hedges might be removed with advantage.

The deep rich colour of most of the cider Apples exhibited at the Show prove that such Apples as Blenheim Pippin and King of the Pippins might be grown more extensively than they are. There is no market channel at present for the district, but if the fruit were grown there is no doubt one would soon open. I hope my Hereford friends will not think me too free in my remarks, but being greatly struck by the suitability of the soil for fruit-growing I could not help putting it on record.

Lord Sheffield Apple was exhibited well at the Show, but at the same time rather spotted. In many parts of Kent the trees of this variety have gradually deteriorated, and many growers have discontinued planting it. The Ecklinville Seedling again was good and ought to be in every garden; at the same time, if grown for market it must be gathered before it is ripe, as it is very tender and easily bruised. Dumelow's Seedling (Wellington) were also good, and the same remark applies to Cox's Pomona, an Apple that has finished well everywhere this year. The new Hawthornden and Alfriston were also seen to advantage in many collections. Of the dessert Apples some good coloured Blenheim Orange, Ribston Pippin, and King of the Pippins (Golden Winter Pearmain) were to be seen.

Of the Pears very good specimens of most of the better varieties were staged in the collections of Mr. Haycock and Sir Henry Stanhope, the Doyenné Boussoch in the latter collection being especially fine in colour. I cannot conclude these few notes without bearing tribute to the kindness and hospitality shown to a comparative stranger by many gentlemen of the city and the district surrounding it.

The healthy appearance of the stock at the King's Acre Nurseries proves the suitability of the soil for trees, and I must congratulate Mr. Cranston on the cleanliness of the ground, which is quite the exception this year.—LEWIS KILLICK, *Langley, Maidstone.*

#### NOTES AND GLEANINGS.

RELATIVE to the APPROACHING WINTER, a correspondent informs us that a snowstorm visited Newcastle-on-Tyne on Saturday night and Sunday morning last, the ground being covered an inch and a half deep. The storm extended all over the north of England, including various parts of Durham, Yorkshire, Lincolnshire, and Staffordshire. Snow has also fallen heavily all over Scotland. A lower temperature has prevailed for some days in the metropolitan district, and rather sharp frosts have been experienced, but no snow has fallen and very little rain, and the weather has been generally favourable for the prosecution of autumn work in gardens and nurseries.

REFERENCE has been previously made to the GRAPES at CHISWICK, and to the excellent crop in the large vinery there. The crop is now being cut, and the fruit is commanding the highest prices in the market owing to the size and high quality of the berries. Several of them which we measured were  $3\frac{1}{2}$  inches in circumference. When it is stated that the crop is by no means a light one, and the Vines have been planted more than twenty years, it will be conceded that they are in good condition, and that there has been no lack of skill in their management during their career. The young Vines in the long corridor—Black Alicante and Gros Colman, with one or two canes of Alnwick Seedling, have made most satisfactory growth, which is maturing admirably. This house may be expected to present a grand appearance in a few years, and will be very profitable provided more piping is afforded, for these Grapes cannot develop the high quality of which they are capable under ordinary Hamburg treatment.

WITH their customary liberality the Benchers of the Inner Temple have thrown open to the public the annual exhibition of CHRYSANTHEMUMS IN THE TEMPLE GARDENS. It is somewhat early to judge the merits of the flowers, as not half of them have expanded, but their appearance is highly creditable to Mr. Newton's cultural ability, considering the unfavourable season and local disadvantages with which he has had to contend. About five hundred plants are arranged in the peculiar structure with which visitors to the gardens have now grown familiar, and for general vigour and health they leave nothing to be desired. Many of the flowers, too,

are extremely good, and this is especially noticeable in the Japanese varieties, of which James Salter, The Cossack, Fair Maid of Guernsey, Gloire de Toulouse, Mons. Charles Hubert, and Fulgore were excellent. That handsome white variety Mrs. G. Bunde is in good condition, also Beethoven, Golden Beverley, and Gloria Mundi, with the old but useful Aurea Multiflora. They will continue in view during the present month, and may be expected to be in their prime in the course of a week.

— AMONG the numerous beautiful and rare plants in Mr. Joad's collection at Wimbledon Park one of most attractive at the present time is the fine Orchid VANDA COEBULEA, a specimen of which has produced a spike bearing fourteen extremely large pale blue flowers. This handsome species is a native of northern India, and has a very distinct appearance, owing to the vigorous erect spikes, and large, delicate, pale blue flowers, that continue in good condition for a considerable time. The plant also succeeds with cooler treatment than the other species and varieties in cultivation.

— ANOTHER very remarkable feature at the above garden is the display of CHRYSANTHEMUMS in the conservatory. The collection comprises some of the best varieties, and the flowers are extremely fine for the season. The plants are tastefully and effectively arranged in a sloping bank, at the back of which is a row of Salvia splendens, the bright scarlet bracts of the latter producing a charming contrast with the lighter colour of the Chrysanthemums. Mr. Smith, the gardener, deserves great credit for the skill and taste he has evinced in obtaining such a fine display thus early.

— WE have received two of the recent works of the popular and talented authoress, Mrs. Lancaster—viz., "TALKS ABOUT PLANTS" and "WILD FLOWERS WORTH NOTICE," the latter being a revised edition of the work originally issued under that title. Each book is written in the pleasing and instructive style which distinguishes all this lady's productions. The volumes are well bound, well illustrated, and well printed, and are admirably adapted for presentation to children. It is, however, regrettable that sundry orthographical errors should have been passed, and in the "Wild Flowers" these are especially noticeable. We find *Sarracenia* for *Sarracenia*, *Galium assarine* for *G. Aparine*, *Glauceum* for *Glaucium*, *maritimum* for *maritimum*, *Chrysoplenium* for *Chrysosplenium*, and *E. Nilotium Hirsutum* (page 55) for *Epilobium hirsutum*; also *tannic* is printed instead of *tannin*. With these exceptions the books are excellent.

— MR. F. H. FROUD, late gardener to J. Balfour, Esq., Hawley Place, Dartford, has been appointed gardener to G. C. L. Lockhart, Esq., The Elms, St. Albans.

— CLEMATIS FLAMMULA is an old and general favourite. At the beginning of October we saw a couple of plants of it in full bloom trained over the porch of a quaint old country church in an exceptionally quiet corner among the South Down hills, and on the last day of that month we saw a cloud of its blossom springing out of a mass of Ivy *Ragmariana* on a wall close by the windows of a dwelling house. The clustering masses of its simple flowers struck us as very appropriate for the church porch, and its delicious perfume renders it equally suitable for both places. Sweet-scented climbers should always be planted near the windows of a house. The *Honeysuckles* for spring and summer, with *Wistaria* and *Jasminum*, then *Clematis Flammula* for autumn, and *Chimonanthus fragrans* for winter.

— WE have received from Mr. H. Cannell of Swanley a box of PRIMULA FLOWERS, which are extremely varied in colour, including shades of pink, crimson, lake, and white. Several of the flowers are well-formed and large.

— THE long-proposed planting of TRAFALGAR SQUARE with trees is at last about to be carried into execution. That smoke-enduring tree, the Plane, is the one selected for the purpose, and a number of young trees will be planted—certainly a preferable course to that proposed a short time since—viz., the removal of some of those established on the Thames Embankment, as large transplanted trees would not thrive freely in the heart of London. We heartily welcome this advance in beautifying the open spaces of the great metropolis.

— WE have received from Mr. Ellam of Bodorgan specimens of his new EARLY CABBAGE. The heads are heart-shaped, compact, surrounded by comparatively few outside



leaves, and when cooked are of the highest quality. The examples sent are remarkable for their dwarf slender stems, and appear to possess all the properties of a superior early Cabbage. This variety is placed first on the list of the Non-pareil section in the report of the Chiswick trials, and the stock has, we believe, been placed in the hands of Messrs. Veitch & Sons for distribution.

— ONE of the best Pears now ripe in the collection at Chiswick is *BELLE JULIE*, a variety that is not so generally known nor widely cultivated as its merits deserve. The fruit is above medium size, very regular in outline, dull brown in colour, with a rather thick and russety skin. The flesh is melting, very juicy, and of refreshing flavour. The tree is a good grower, forming a handsome pyramid, and is a constant and free bearer. Mr. Barron has a high opinion of this Pear; indeed, on account of its uniform productiveness and good quality he esteems it one of the most serviceable Pears in cultivation.

— In the same garden *CRATÆGUS PYRACANTHA CRENATA* merits notice. It is fruiting in great profusion, the scarlet berries producing a fine effect. These are of a deeper scarlet than those of the normal species—more of a red currant colour—and are very rich. But the beauty of the plant would not be of long duration were it not netted, for the birds appear to be great admirers of the fruit, and are by no means satisfied with looking at it. *C. Pyracantha* is not infrequently spoiled by pruning the young growths too closely during the summer. The medium-sized short-jointed shoots should be left to mature; they then flower and fruit throughout their entire length, and in that state few evergreen wall plants are more ornamental.

— THAT remarkably handsome stove climber *ALLAMANDA HENDERSONII* is now bearing a profusion of its bright orange yellow flowers in the aquatic stove at Sir H. Peek's residence, Wimbledon House. The plant is a very large one, and is trained to the roof of the house, but a large number of the vigorous shoots are allowed to hang down in a natural manner. Mr. Ollerhead, the excellent gardener, states that it continues flowering during the greater portion of the year, and yields a supply of flowers of inestimable value.

— WE have received from Messrs. Carter & Co. specimens of *CRESTED ORNAMENTAL KALE* as grown for them by Mr. Frisby of Blankney Gardens, Lisleford. Not only are the leaves attractively coloured with pink, cream, and green, and pleasingly fringed, but from the midribs crested growths issue, imparting to the foliage a singularly curled appearance. The leaves are suitable for garnishing purposes during the winter, and the heads are fairly good and retain much of their colour when cooked, but are not quite equal in flavour to the green Kales.

— In the fine collection of *ORCHIDS* at A. Sillem, Esq.'s, residence, Southall, Sydenham, are several of considerable merit. Mr. Salter the gardener is a thoroughly practical man, and evidently has a good knowledge of the requirements of Orchids, for they all appear in excellent condition. *Lælia præstans* and *Cattleya marginata* were bearing numerous handsome flowers, and the plants being suspended along one side of the house presented a very fine display. *Lælia Perrinii* is a handsome Brazilian species; the sepals and petals are light purple, and the labellum is tipped with rich purplish crimson. Several fine forms of *Oncidium varicosum* were bearing great numbers of their bright yellow flowers. The graceful *Oncidium ornithorhynchum* was also bright with its rose-coloured sweetly perfumed flowers. But perhaps the most striking plant in flower on the occasion of our visit was that peculiar but pretty Orchid *Restrepia antennifera* with its long antennæ-like petals and lower crimson sepals which are so strangely dotted with dark purple. This species is an excellent one to cultivate, as it continues in bloom such a length of time.

— IN the same establishment is an extremely fine *CISSUS DISCOLORE*, which covers the back wall and sides of a lean-to house. It grows remarkably freely, and the foliage is large and has the fine tints which distinguish this species excellently developed. The plant is cut hard back every year, and the growth it makes in a few months is surprising. Mr. Salter finds the leaves of great service for various decorative purposes.

— THE following *BOTANICAL APPOINTMENTS* have been recently made by the Colonial Office on the recommendation of the Director of the Royal Gardens, Kew:—H. Trimen, M.B., Lond., F.L.S., Senior Assistant in the Department of Botany

British Museum, to be Director of the Royal Botanic Gardens, Ceylon, in the place of Dr. Thwaites, C.M.G., F.R.S., who retires on a pension with the title of Honorary Government Botanist. Dr. Morris, B.A., Trin. Coll., Dubl., F.G.S., late Assistant Director of the Royal Botanic Garden, Ceylon, to be Director of the Botanical Department, Jamaica. H. Marshall Ward, Scholar of Christ's College, Cambridge, to be employed for two years as Cryptogamist in the investigation of the Coffee-leaf disease in Ceylon. He will be subordinated to the Director of the Botanic Gardens, and will have the use of the Assistant Director's house. Mr. Morris and Mr. Ward were formerly students of the Science and Art Department.—(*Nature*.)

### BOUVARDIAS AT CHISWICK.

THESE exceedingly useful and beautiful plants are now very largely cultivated both by market growers and in gentlemen's gardens, as their value for decorative and cutting purposes is generally appreciated. Great quantities of the plants and flowers, particularly the latter, are sent into the chief London markets, where there is always a brisk demand for them owing to the flowers being so well adapted for button holes and bouquets. The cultivation of *Bouvardias* is attended by no difficulties of any consequence, and with judicious management they prove of great value during autumn and winter. The system adopted in many places of planting them out in a good sheltered border during summer is an excellent one, for the plants acquire more vigour and continue in flower longer than those retained in pots. When taken up in September and potted they must be placed in a house, shaded and kept close until established, and if they are retained in a temperature of 60° to 65° the flowers are much more freely produced than in a cool house. Cuttings of the young shoots taken off in spring strike readily in bottom heat, and the plants thus obtained after they are well rooted may be grown on in a cool situation during summer or planted out as already mentioned. *Bouvardias* require a rich light porous soil and abundance of water when growing in pots.

A good selection of varieties and species are now flowering at Chiswick, and from them we select the following as the most worthy of general cultivation:—*Hogarth*, one of the best, has downy ovate leaves and large heads of flowers, the limb of which is bright scarlet, and the tube tinged with crimson. *Vreelandii*, leaves lance-shaped; flowers of medium size in dense heads, white tinged with pink. *Maiden's Blush*, similar in habit to the last; limb of corolla light pink, tube a darker shade. *Jasminoides*, very pretty, of free growth and good habit; leaves smooth, lance-shaped, flowers pure white. *Humboldtii corymbiflora*, leaves smooth lance-shaped; corollas 3 to 4 inches long, lobes of the limb large and pure white. *Longiflora flammea*, fine heads of glowing scarlet flowers; effective. *Leiantha*, leaves ovate, downy; flowers small, bright scarlet, in dense heads. *Elegans*, leaves large, slightly downy; flowers of a glowing crimson hue, in large heads. Lastly, *angustifolia splendens*, a pretty dwarf variety with narrow rough leaves and small heads of bright scarlet flowers.—L. C.

### CROXTETH.

THIS fine establishment is situated five and a half miles from Liverpool, and is the seat of the Right Hon. the Earl of Sefton. It is approached from West Derby by a long and well-kept drive about a mile and a half in length, the entrance being in a direct line with the main road from Liverpool. At about half way from its commencement the road branches to the right; the back drive, and short distance further on the drive leading to the front of the mansion, passes under one of the main roads. The mansion is a noble and imposing structure, and large additions and improvements have recently been made to it by its noble owner. Croxteth is a fine, extensive, and well-kept establishment, and was honoured with a visit from H.R.H. the Prince of Wales in March, 1878. The flower garden is situated to the left of the mansion, and the beds are cut out in the turf. No attempt is made to carry out the formal system of carpet bedding. The usual assortment of flowering plants are employed, and present in the height of the season a mass of colour, especially when viewed from a distance. The pleasure grounds beyond the flower garden are elaborate and on a large scale, containing some fine forest trees, *Rhododendrons*, and other choice shrubs. In front of the mansion are some narrow scroll beds, which at the time of our visit were attractively filled with *Lobelias*. The American

garden overlooks an extensive lawn, very even and level. From this point can be seen the large and well-wooded park, and beyond that the noble seat of the Earl of Derby. The garden presents a magnificent appearance during the time the Azaleas and Rhododendrons are in bloom. Thousands of these plants are employed, not only in the garden alluded to, but they abound in all the shrubberies. The forest trees in this portion of the pleasure grounds are of an immense size; the trees stand separate, or at the most two together, and are thereby allowed to properly develop their beauty. They are planted on raised hillocks, a system which in bygone days appears to have been largely practised in these grounds.

The fruit garden and houses are situated some distance beyond the mansion, and yet in direct communication with the other grounds. Running parallel with the garden wall is a fine row of Limes all on raised mounds, and the wall is covered with a very choice collection of Ivies. Considerable improvements have been made by Mr. Barham; in fact,

this portion of the ground has been entirely remodelled. The first range of houses comprise three Peach houses, two of which were newly built, and the trees were planted last autumn. The third is an established house, and the trees were bearing some magnificent fruit; the other house is a late vinery, principally containing Alicantes, which were carrying a good crop of Grapes.

Passing out of the range just mentioned we entered the fruit and flower garden. By the side of the walks are borders planted with annuals, herbaceous and bulbous plants—of which Lilliums largely predominate—and the old common white Lilies were in large numbers and appeared magnificent at the time of our visit. Many small beds in this garden were planted with Ten-week Stocks, Asters, Pyrethrums, Iberis, Pinks, and many varieties of Carnations. The Rose house is a span-roofed structure with a bed in the centre, the Roses being trained to an arched trellis. The varieties are Teas. The side stages are devoted to plants. An adjoining house of



Fig. 39.—CROXTETH.

the same size is devoted to Azaleas and other hardwooded plants; trained under the roof was the lovely and useful *Clematis indivisa lobata*. Fuchsias are trained up each rafter and spurred-in like Vines. Another range contains two plant houses, span-roofed, high at the sides and with circular ends; and four vineries, which overlook the fruit garden. One house is filled with healthy Camellias and choice greenhouse Rhododendrons; the other is devoted to flowering plants. The first vinery in this range is planted with Black Hamburgs, which were bearing crops of ripe and good Grapes. The second house is partially planted with young Vines, which were doing well; they had made good wood. The next house had also been partially planted, and the Vines were doing equally well. There is a range close behind the one last mentioned. The first house is planted with Cherry trees, which under Mr. Barham's superior management never fail to produce an abundant supply of fine fruit. A portion of the range is devoted to Muscat Vines—old Vines which had been cut down two or three times, and were carrying a heavy crop of fruit. The last department was devoted to Plums, and we may here remark that the spur system is principally practised, and the trees were carrying a very fine crop of fruit. We very seldom see Plums grown under glass more successfully than at Croxteth. Numbers of Peach and Nectarine trees are grown in

pots in the Plum as well as the Cherry house. Pyramid trees are planted at the front of both houses, and trained trees on the back wall.

Pines are grown in two houses, and the plants were stocky and producing good fruit, but the succession house is badly adapted for the purpose. There is one house devoted to stove plants, which also contains a very select collection of Orchids. The stove plants were of a suitable size for table decoration, &c., and for that purpose they were as fine as any we have seen. The house also contains a very fine *Stephanotis*, which produces its fragrant flowers in abundance. There are also houses devoted to Cucumber and Melon culture.

The kitchen garden is situated some distance from the mansion, and is a large walled enclosure. Many standard fruit trees are grown in one portion of it, and the ground was well cropped and clean. The bothy for the young men is a model. It has been wonderfully improved, although it was good before. The young men have great reason to appreciate these comfortable apartments. Our notes of Croxteth would be incomplete without reference to one of the leading features—viz., the remarkable cleanliness which is everywhere apparent, and the grand lawns and fine trees. Portions of the park are being renovated, and with Messrs. Suttons' grass seeds and Mr. Barham's good management a marvellous improvement

in the turf has been effected. We congratulate Mr. Barham upon the able manner in which he superintends the gardens, and thank him for the courtesy on the occasion of our visit.

#### BOTANICAL ORTHOGRAPHY.

ON page 345 Dr. Wallace expresses a desire that opinions should be stated concerning the generalness and desirability of spelling the names of species and varieties with initial capital letters. Respecting the first part of the subject—viz., the general adoption of the method advocated by Dr. Wallace, there can be no doubt whatever that it is entirely opposed to the established and customary mode of spelling plant names which prevails in the most important botanical and horticultural works. In the "Laws of Botanical Nomenclature" adopted by the International Botanical Congress held at Paris in 1867, when 150 European and American botanists were assembled, we find that the 34th article states that "A specific name may be an old generic name or a substantive proper name. It then takes a capital, and does not agree with the generic name." This is the rule that is generally adopted, and it is only in such cases that we find initial capitals employed for specific names in the following among many other authoritative works:—Linnaeus's "Species Plantarum," Steudel's "Nomenclator Botanicus," Lindley's "Vegetable Kingdom," London's "Encyclopædia of Plants," the "Journal of the Linnean Society," the "Botanical Magazine," the "Botanical Register," and Hooker's "British Flora."

In regard to the desirability of the reform suggested by Dr. Wallace I again cannot agree with him. He remarks that "Either all the specific names and those of varieties should be spelt with a small initial letter or with capitals. The present mode, in my opinion, fosters confusion between generic and specific names where spelt with capitals." Presuming such confusion to exist, I fail to see how matters would be improved by employing capital letters in every case. If the comparatively few instances in which capitals occur in specific names are confusing, it appears to me that by increasing their number we should only increase the confusion. If reform is needed it should rather take the course of abolishing all capital initial letters in spelling the names of species and varieties, and that certainly would prove advantageous in a degree, for generic and specific names could not by any means be then confounded.—A BOTANIST.

#### HORTICULTURAL NOTES.—No. 3.

##### NEWBURY AND DISTRICT—ENGLEFIELD PARK.

ENGLEFIELD PARK, the seat of R. Benyon, Esq., is nearer Reading than Newbury, and is about one mile from Sheale station between those towns. The house, beautifully situated on an eminence, is well backed up on the north side with trees, and near the front there is a very fine terrace garden well planted with the ordinary bedding plants. The conservatory overlooking the terrace is a very elaborate well-built structure. It contains what are probably some of the finest Orange trees in the country, a very large plant of *Brugmansia arborea*, and a great variety of the ordinary conservatory plants. The ranges of forcing houses, &c., near the pleasure grounds are very extensive and well stocked. Pine Apples are extensively grown, and the soil used is turfy loam only. Many of the fruiting Pines were planted out and were swelling fine fruit, especially the Black Jamaica, Prince Alfred, with Smooth and Prickly Cayennes. The quality of the latter variety is much liked, but the fruit does not keep well. Grapes generally were looking well, crops heavy and bunches good. The Lady Downe's is considered the best late variety. The lights of the Peach houses, which are large and well furnished, can be taken off, and the trees being trained up the roof are by this arrangement kept clean, and well watered too this season by the rains. Royal George and Early Grosse Mignonne are the favourite Peaches for forcing, and these are followed by the Noblesse, Bellegarde, Walburton Admirable, and Salwey—a good selection. Violette Hâtive, Hunt's Tawny, and Elrue Nectarines are grown. Apricots are largely and successfully grown under glass in conjunction with the late Peaches and Nectarines. Why are they not more generally grown? Moor Park is found to be the best for this work; the Royal Apricot is also grown, but sets badly. The house for Figs is unusually large; Brown Turkey is principally grown, the Brunswick does not do well.

There is a great variety of useful and choice stove and greenhouse plants grown here. In the stove a plant of *Allamanda*

*Schottii* planted out and trained up the roof was flowering grandly, and would continue to do so for a long time. *Jasminum sambac* is treated in a similar manner, and proves very useful. Of Orchids the best specimens were *Peristeria elata*, *Dendrobium densiflorum*, *D. Palmerii*, *Coelogyne cristata*, &c. A good and well-grown selection of *Crotons* consisted of *amabilis*, *Weismanni*, *majesticus*, *undulatus*, and *Veitchii*. *Camellias* for cutting purposes are planted in a large pit, and must prove very useful. *Bouvardias* are largely grown, as also are *Poinsettias*, *Euphorbias*, *Deutzias*, &c. There are many fine specimens in the fernery, very noteworthy being the plants of *Latania borbonica*, *Areca Baueri*, *Alsophila excelsa*, *Adiantum concinnum latum*, *Asplenium paniculatum*, &c. Immediately opposite the principal entrance to this house there is a fine bank of *Adiantum cuneatum*, out of which springs a good specimen of *Cycas revoluta*, which is a very effective arrangement.

The fruit walls are particularly good and well furnished, Englefield being famous for its Pears. The late Dr. Lindley was a great admirer of these fine Pear trees, which are said to be one hundred years of age. They are still vigorous and prolific, as are also the younger trees throughout the garden. The most fruitful were the Jargonelle, Marie Louise, Brown Beurré, Joséphine de Malines, Duchesse d'Angoulême, Passe Colmar, Zéphirin Grégoire, Brockworth Park, and Seckle. Peaches again on the walls were for the year remarkably healthy and fruitful, which in a great measure is owing to the use of Parham's wall protectors. These consist of a light iron framework or coping permanently fixed to the wall, and in which are slid squares of glass. These are only temporarily fastened, and are taken out and stored away when no longer required. Light blinds which can be pulled up or down as required are suspended from the coping. They not only protect from frost but easterly winds, which are particularly injurious to the young growth of Peach trees, but can be warded off by a judicious use of the blinds. The crops in the kitchen garden looked well, and the whole place reflected much credit on Mr. Coombs, the gardener in charge.—W. IGGULDEN.

In my remarks on Welford Park I inadvertently stated that the Grove End Scarlet Strawberry was the favourite for forcing purposes. It should have been for preserving purposes. Mr. Ross informed me that he had for many years grown this variety for preserving, no other Strawberry jam equalling that made from the Grove End Scarlet.—W. I.

#### GRAPES RIPENED WITHOUT FIRE HEAT.

ON the 10th of October some specimens of Grapes grown and ripened in a cool vinery without the aid of fire heat in any shape whatever were submitted to the Editors of this Journal, who were kind enough to send in writing to the author of this article the following opinion upon some of the specimens—"The examples are very interesting as specimens of what may be achieved with a cool vinery without the aid of fire heat. The colour of the black varieties was perfect, and the flavour of Black Hamburg and Foster's Seedling were all but perfect, while Dr. Hogg was ripened with a flavour which is quite marvellous for a variety belonging to the Frontignan class."

How these Grapes have been grown in a summer cold, wet, and dull to a degree almost without precedent, so as to merit a commendation like that given above, may be a matter of interest to many amateurs besides the writer of this notice. There are, for instance, many professional men, fond of their gardens as a source of pleasure and as a means of wholesome relaxation from graver pursuits, who would gladly grow Grapes were it not for the belief that without the help of fires or hot water and the services of a regular gardener they could not expect to succeed in their attempt. A proof that this success is within the reach of one amateur may serve to encourage others to try and follow in the same path.

As a first step to this end a knowledge of some simple rules of Grape-growing must be acquired, for the saying of Lord Bacon that "a cripple in the right way will beat a racer in the wrong" is as applicable to this as to other things. This knowledge may be speedily acquired by the perusal of one or more of the little manuals on the subject and of the articles, written by masters of the art, which often appear in the *Journal of Horticulture*. Observation will soon give force and meaning to these teachings. Any little difficulties that may occur in the progress to knowledge may be made the subject of an appeal to the Editors of the Journal, and information and advice will at once be given with ever-ready courtesy. For



the rest, to be in earnest and to take a loving and constant interest in the matter are conditions of success not peculiar to Grape-growing.

Our viney faces due south, and is 30 feet long by 12 broad inside measurement. The whole of this space is enclosed by a brick wall, which rises above the level of the outside soil, on the north to a height of 8½ feet, and at the front and sides of four or five courses of brick only. Between the top of the bricks in front and the plate on which the rafters rest is a continuous line of ventilators, ten in number. Each one is a simple well-fitting board 3 feet long and 11 inches wide, having two hinges below and opening outwards and downwards. When closed it is fastened by a single metal button. These short ventilators can be speedily opened and shut from the outside; and it is possible by their means to ventilate individual Vines that happen to be most forward without lowering the temperature around those that may not yet require front ventilation. The roof is a combination of span and lean-to: the front rafters, of which, including the two outside ones, there are eighteen, being 12½ feet in length, and those at the back 5½ feet. The ridge plate between them is 11½ feet above the path. The angle formed by the front slope of the roof and the line of this latter measurement will be seen, therefore, to be very acute. At either extremity is a door 2 feet 6 inches wide, and between them runs a path, leaving a border of 3 feet on the north and a broader one to the south. Each of these borders slopes somewhat to the path, so that the soil on which the front row of Vines is planted is nearly on a level with the top of the brick wall on the south. I ought to mention that this path is a series of short planks lying across two longitudinal iron sleepers (2-inch gas piping would answer well), which are supported upon occasional brick piers. The object of this is, of course, to prevent treading on the soil, but the precaution is perhaps hardly necessary. The top ventilators are boards similar to the lower ones, lying just below the ridge plate on the north side, having the hinges above and in length, each one covering two spaces between three contiguous rafters. They open by cords from the inside in the usual way. To guard against the effects of exceptional sun heat there are also three ventilators in the back wall, and a narrow one from top to bottom between it and the doors.

In 1877 ten good Vines were planted at equal distances along the front border 20 inches from the south wall. They run in the following order from east to west:—Foster's Seedling, Black Hamburg, Golden Champion, Muscat Hamburg, Black Hamburg, Dr. Hogg, Madresfield Court, Mrs. Pinco, Muscat of Alexandria, and Lady Downie's. It will thus be seen that the Grapes requiring most heat are towards one end of the building.

At a distance of 9 inches from the back wall is another row of Vines. The plants are 4 feet apart, and are trained to stout upright wires; they are not intended to climb more than 6 feet high. Two Vines of Tretham Black and one of Foster's Seedling in this row bore excellent Grapes this summer.

There is nothing unusual in the soil in which these Vines grow most luxuriantly. Turves from old pastures 4 or 5 feet thick, the grass downwards, cover the bottom. Upon this is a mixture of turfy soil, strong rather than otherwise, old mortar rubbish, and well-decayed horse and pig manure. A good supply of bones, such as every family furnishes, coarsely broken, was added. I took care that large hollow bones were not much broken, for they help to keep the soil open, and the roots of the Vines speedily entering their cavities seem to revel on what they find within. To receive this soil the ground within the viney was removed to the depth of 2½ feet. At the bottom were placed some inches of broken stone and lime concrete, and upon this ran several rows of 2-inch drain tiles, all converging towards the lowest point. So that the Vines may be said to be planted in a box with walls at the sides and concrete at the bottom, and having no other outlet than that by which the drainage water escapes. The rain water falling on the roof is conveyed into a spacious tank in a greenhouse adjoining the west end of the viney.

Whatever success has been attained in this house in growing Grapes without the help of fire heat is owing mainly, I think, to—first, the form, &c., of the house, facing due south, with as much glass and as little wood as possible; the former fitting well, and the slope of the roof being at an angle favourable to the direct transmission of the sun's rays. Then the western end and the northern slope of the roof admit the afternoon and evening sun, the ground on which the building stands sloping gently from east to west.

Secondly, watchfulness in regard to the use of the ventilators. The giving of air from the top, whilst the Vines are growing during any odd hour in the day when the temperature within could not be lowered by so doing, and on cold days not opening the ventilators at all, or opening one here and there perhaps only to the extent of an inch or two. When the Grapes commenced colouring one or more of the front ventilators were opened, choosing those that were near the most forward Grapes. Above all, during the cold dull summer, remembering that the sun heat was a thing to be treasured, if the sun shone for an hour or two only and that feebly we never opened at all, but used the sun as a means of warming the house for hours after it was gone. I am sure, also, that our operations have been much helped by the wall at the back of the viney. Generally speaking such walls are whitened by lime-wash: in this way the surface of the brick is rendered smooth and almost incapable of absorbing much heat; whereas the wall of rough dark bricks absorbs a large amount of heat, and from its broad surface long after the sun has set is radiating far into the night a gentle warmth, playing the part in fact of hot-water pipes. During a hotter summer more air would of course be necessary; but the extent to which the ventilators are to be opened on all occasions will be taught by observation. It is a question of watching day by day, and feeling the way to what is right by the effects produced. I can only say that our Vines have been most healthy, the leaves large and dark, the wood hard, short-jointed, comparatively pithless, and speedily ripened. So far also we have had no insect pests.

Thirdly, the roots of the Vines are confined strictly within the house. It is possible that some of the failure that has been experienced this season in giving colour and quality to Grapes in heated houses may have been owing to the roots being outside, in soil cold and perpetually drenched with rain. It has always seemed to me difficult to reconcile the practice of a high temperature for the ascending portion of a Vine, and a low one for the descending portion, with what is observed in Nature. Certainly in the warm parts of Spain and France the Vines grow usually in a rocky dry soil, where the roots as well as the green parts must often be well nigh baked. There is no fear, if top-dressing is practised, of the soil becoming exhausted in the course of many years, as I know from some experience of Grape-growing elsewhere than where we now live. But even were it otherwise, nothing is easier than gradually to remove the old and substitute new soil.

Other advantages attending the intramural situation of the roots are the facilities for watering and mulching. As soon as the buds begin to swell the ground is gradually covered with a layer 2 inches thick of chopped fresh horse droppings, the effect of which, besides affording food to the Vines, keeps their roots near the surface and saves much labour in watering. Every morning whilst the Vines are growing and until the period of colouring is at hand, the gardener's assistant during the breakfast time of the family pours over, first one and then another section of the soil, the slops from the dwelling house. I may add, that excepting for the purposes of watering, making tidy, &c., the gardeners seldom enter the viney, and for this simple reason: It is the delight of myself to do the pruning, training, &c., whilst a gentler hand, guided by dexterity and judgment, has for years past found pleasure in thinning the bunches. Others of our family attend to the ventilation, and it is remarkable how short a time each day suffices for everything that has to be done.

I will conclude this account by referring again to the pleasure and recreation attending the management of a small viney. The watching from day to day the progress of the Vines from the moment of pruning, the swelling of the buds, the opening of the flowers with their sweet delicate fragrance, to the time when the purple and golden tints steal over the swelling berries, deepening more and more until the heavy bunches, whilst yielding enough to the owner, are ready for the bedside of the sick or the table of friends.—A SUMMER PHYSICIAN.

[Of the Grapes above referred to we may add that the Black Hamburgs were quite ripe, of good size, and well coloured, very juicy and refreshing, but flesh lacking firmness. Golden Champion, large, quite ripe, but not of high quality. Muscat of Alexandria, large, good, but not perfectly ripe. Foster's Seedling, quite ripe, good berries, and of good quality. Dr. Hogg, very good berries, quite ripe, and of excellent flavour. Muscat Hamburg, berries not large but well coloured and of good quality, but flavour not fully developed. They were the

best examples we have seen this year of Grapes ripened without fire heat.—EDS.]

### SLUGS.

FOR once I cannot agree with Mr. Radclyffe when he says "brewers' grains are a farce." Here slugs have been devouring almost every plant. On Mr. Richard Smith's recommendation we tried young ducks. They were soon gorged, and then improved their digestive organs by eating a good bed of *Myosotis dissitiflora*, all our young Cauliflowers, Wallflowers, Lothian Stock, &c.; they sat upon our named Polyanthus and spoilt them, so we ate the ducks. The Cornwall plan with fresh brewers' grains and lime has answered admirably. In one month we have destroyed over three bushels of slugs. My man places little heaps of fresh grains at sunset twice a week; in an hour hundreds of the slugs would be wending their way to the grains. In about three hours the gardener goes round with a light, and the boy sprinkles quicklime on the heaps.—R. H.

### GRAPE VINES FROM EYES.

MR. GILBERT in his letter on growing Vines in pots holds it next to impossible to grow well-ripened fruiting canes from eyes the same year. I have, however, had no difficulty in so growing them, and have obtained prizes for the fruit. This was, I believe, first accomplished by Mr. Pillins forty or fifty years ago, who at that time was living at Tortworth Court as gardener to the Earl of Ducie. This mode of propagation was then unknown, I believe, to the leading nurserymen, who increased their stock by layers.—JOHN MACKEY.

LATE GLOBE ARTICHOKE.—We are still (November 1st) cutting some good dishes of these, and we find them most useful at this season of the year. Old plants are generally past bearing by this time, but there is no difficulty in getting the suckers which were planted in April to fruit so late as this. Another plan is to cut the heads and stems off old plants as early in the season as possible, and this generally induces more young growths to start from the bottom, which produce fruit during October and November.—A KITCHEN GARDENER.

### WORK FOR THE WEEK.

#### FRUIT HOUSES.

**Orchard House.**—Although it is desirable whilst the foliage is on the trees to repot some, and to attend to lifting or root-pruning others that are planted out, yet there is danger in a season like the present of performing these operations too early, shrivelled wood and immature buds being the result. In most cases it is advisable to defer top-dressing where trees in pots have rooted into the borders until the leaves show indications of falling, as it is injurious to deprive them of roots whilst the wood is comparatively soft and the buds undeveloped. All trees in pots should be shifted into larger pots, or the soil top-dressed if necessary, whilst those rooting beyond the pots should have the roots cut off close to the pots when the leaves show indications of falling, and the soil from the surface removed to as great a depth as practicable, the portion taken off being at once replaced by fresh compost—turfy loam, with a fourth of well-decayed manure and a sprinkling of half-inch bones in a rather dry state—so as to admit of being rammed down as firmly as possible. A good watering will then be necessary, it being essential that the soil be kept moist until all the leaves are off, after which but little water will be required. Young trees should be shifted into pots 15 inches or 18 inches in diameter according to their requirements, providing efficient drainage and ramming the soil as firmly as possible. Trees planted out should be examined, and if growing too luxuriantly or not fruiting satisfactorily they must be carefully lifted, shortening back the strongest roots, and laying them in fresh compost, afterwards mulching with short manure. The effect of lifting is to keep the trees in a fruitful condition, counteracting the tendency to produce gross unripened wood. When the leaves of trees in pots have fallen, the trees may be placed outdoors in a sheltered situation and on a bed of ashes, the surface of the soil being protected by cocoa-nut fibre refuse. By placing the trees outdoors for a time the house will be available for Chrysanthemums, &c. If there be any insects avoid the compounds of clay and others that leave a thick deposit upon the shoots and buds, and syringe with quassia water, 1 lb. of chips to four gallons of water, boiled for fifteen minutes, adding when cooling 1 lb. of soft soap. *Peaches* suitable for orchard-house culture are Early Beatrix, Hale's Early, Early Grosse Mignonne, Early York, Grosse Mignonne, Royal George, Bellegarde, Barrington, Princess

of Wales, and Walburton Admirable. *Nectarines*: Lord Napier, Stanwick Elruge, Elruge, Pine Apple, Pitmaston Orange, Violette Hative, Victoria, and Albert Victor. *Plums*: July Green Gage, Angelina Burdett, Jefferson, Kirke's, Woolston Black Gage, Transparent Gage, and Coe's Golden Drop. *Pears*: Souvenir du Congrès, Beurré d'Amanlis, Williams' Bon Chrétien, Louise Bonne of Jersey, Beurré Hardy, Maréchal de Cour, Durondeau, and Doyenné du Comice. In cold localities where *Apples* do not attain perfection for dessert purposes, Early Harvest, Early Strawberry, Kerry Pippin, Beauty of Waltham, American Mother, Cox's Orange Pippin, Golden Pippin, Ribston Pippin, Margil, De Neige, Api (Lady Apple), Mannington's Pearmain, Mela Carlo, Melon Apple, Adam's Pearmain, and Scarlet Nonpareil.

**Vines.**—Since the certainty of keeping late Grapes in good condition up to May has been clearly established very early forcing has in many instances been given up. Where, however, it is still necessary to have fresh ripe Grapes in April there must not be any further delay in starting the Vines. If in pots a good supply of fermenting material for affording bottom heat to the roots should be in readiness. A good bed of Oak or Beech leaves with a little stable dung added will greatly facilitate the starting into growth, and will be more beneficial to the Vines than fire heat alone, the pots not being subjected to a higher temperature than 65° to commence with, and in the case of having the Vines planted out in inside borders a bed of the material above named will be advantageous. A temperature of 50° to 55° by night and 60° to 65° by day will not be too much to start with, as at this season a higher range of temperature is required to excite the buds than is the case with those not started until December or January. Syringe three times a day, and keep every part of the house moist by sprinklings in bright mild weather. Remove all matured leaves from Vines going to rest, keeping the house cool, airy, and dry. Push on the pruning of Vines in succession houses, thoroughly cleansing the glass with clear water, and the wood-work with soap and water. The rods should only have the loose bark removed, and be dressed with an insecticide; a little extra care in cleaning, or if necessary painting the house and dressing the Vines, will be well repaid in next year's routine. There is nothing like a long rest for Vines, therefore we advise growers to commence pruning as soon as the leaves have fallen, so as to induce as complete a rest as possible.

**Peaches and Nectarines.**—The trees in the earliest house having been properly dressed with an insecticide as previously recommended and tied to the trellises, a start may be made about the middle of the month. The house may be kept close, but admitting air freely above 50°, employing fire heat to prevent the temperature from falling below 35°. The slower the trees are excited the stronger will be the blossoms. The outside border must be well protected with litter or dry fern, and if wooden shutters or tarpaulin are at command they will be advantageous in throwing off excessive wet. The inside border must be brought into a thoroughly moist condition. The trees in the succession houses may be pruned as they become devoid of leaves. If former instructions have been carried out but little pruning will be required, and, except in shortening back any shoots that may be necessary for the origination of new parts, the less the knife is used when the trees are leafless the better. The houses should be thoroughly repaired and painted, and the trees dressed with an insecticide before being tied to the trellises. Keep the house as cool as possible, not allowing the inside borders to become very dry.

#### FLOWER GARDEN.

Vacant beds should be manured and deeply dug or trenched, and planted with bulbs and spring-flowering plants or dwarf bright shrubs. There is no more necessity for empty window boxes than for bare mounds of earth in the flower garden in winter and spring. A change of occupants is now absolutely necessary. Small evergreen bushes have a cheerful and pleasing appearance, especially when a good selection is made of plants varying in character or growth, form of leaf, and tint of foliage. *Erica herbacea carnea*, *Skimmia japonica*, and *Euonymus radicans variegatus* are good for margins. *Aucuba japonica mascula*, *A. limbata*, *A. longifolia*, *Laurustinus*, *Osmanthus ilicifolia aurea*, and *O. variegatus nanus*, with green, golden, and silver tree *Ivies* have bold foliage; *Cupressus erecta viridis*, *C. nana glauca*, *Cryptomeria elegans*, *Thuja aurea*, and *Thunopsis borealis* have small foliage. Dwarf shrubs 12 to 18 inches high can be arranged in single line in ordinary window boxes, with a line of smaller plants in front, and between the taller plants may be introduced dwarf plants of *Chrysanthemums*. They will last until near Christmas, and may be succeeded by *Hyacinths*, *Narcissi*, and *Tulips*. Along the front of the boxes, in the spaces between the shrubs forming the margin, should be introduced a few *Scillas*, *Crocuses*, and *Snowdrops*, and just behind them or over the bulbs double *Daisies*, *Primroses*, *Alpine Auriculas*, &c. The bulbs and spring flowers may be dispensed with, and the small-leaved green and variegated *Ivies* planted to fill in the intervening spaces and hang down in front of the box. *Sedums*, *Saxifragas*, and *Sempervivums* may be introduced with good effect; indeed, it is not difficult to design elaborate arrangement, the difficulty is in using plants that will endure the winter in towns.



## PLANT HOUSES.

**Greenhouse.**—China and Tea Roses that were cut back and potted in spring, and have been placed out of doors in a sheltered situation and well attended to during summer, will now have abundance of flower buds, and if placed in a light house will at once open their blooms, the temperature being from 45° to 50° by artificial means. If a considerable number of plants are treated in this way for autumn flowering a succession of flowers may be had by placing some of the plants in a house from which frost is only excluded, introducing them to gentle heat as required. The Tea-scented and China Roses from their continuous flowering are the best for using in this way; and being well attended to in summer with water and liquid manure, and keeping them free from insects, they will be found very useful for furnishing cut flowers until the end of the year. Carnations for producing successional flowers must be well exposed to light and be well attended to with water, as anything like a check to steady progressive growth inimically affects the flowering. A temperature slightly warmer than an ordinary greenhouse is essential to have blooms freely produced in winter, and the plants must be well grown previously or the flowers will be few and poor. Mignonette to succeed in the winter season must have a light position, otherwise it is weak and the spikes are puny. The earliest flowering plants will require to have the principal shoots tied up to neat stakes. Free ventilation is essential, and a temperature of about 45° in the night to 50° in the day is desirable for plants required to bloom, but successional plants should be kept cool and airy. Cyclamens now producing their flowers should be kept near the light in a temperature of 50°; more heat will bring up the flowers quickly, but they are not by any means nearly so enduring in a cut state or for decorative purposes as those forwarded in moderate heat. Fuchsia cuttings struck in August form by far the best and most satisfactory plants for next season's bloom, and should now, if not already done, be potted into pots 6 or 7 inches in diameter, placing them in a house with a temperature of 50°. Keep the plants tied up and the leading shoots stopped as may be necessary according to the natural habit of the variety. If red spider are present syringe on the under side of the leaves with a soapy solution. Old Fuchsias that have done flowering and which can be brought into bloom to precede the others should now be carefully dried off, but if required early they must not be kept too dry. They may be stored in any place free from frost, but not under stages where they get the drip from other plants. Primulas should be kept near to the glass, and they succeed admirably in a temperature of 45° to 50°. Liquid manure should be occasionally given, as with good ventilation and a little heat they are not so liable to damp off as in a cool house. Zonal Pelargoniums that have been prepared during the summer for winter flowering will be producing their trusses in a temperature of 50° to 55° with moderate ventilation. The conservatory will now be gay with Chrysanthemums, which in most places are a month late. These with the most forward Primulas, Salvia Heeri, and *S. splendens* will do good service. Early-flowering Epacris and Ericas, Camellias, Vallotas, Epiphyllums, and Solanums are very useful. Tacsonia Van-Volxem and Lapageria rosea and alba are very ornamental. Other climbers of a coarse character should be freely pruned, so as to give as much light as possible to the plants underneath. Hardwooded plants should be frequently examined, and if mildew appears promptly apply flowers of sulphur, allowing it to remain on for about a week, then syringe it off, the plants being laid on their sides so that the sulphur does not by any means reach the soil. Apogoneton distachyon grown in shallow tanks or deep pans filled with water, will, if afforded plenty of light, continue producing its white hawthorn-scented flowers through the winter in a temperature of 45° to 50°. The ordinary stock of greenhouse plants will only require fire heat in case of frost, 40° being a safe minimum, and occasional fires in case of continued dull damp weather, ventilating rather freely in mild weather. Fumigate upon the first appearance of aphides, and for thrips two or three nights consecutively. Water in the early part of the day, but lessened supplies will now be necessary.

## TRADE CATALOGUES RECEIVED.

H. Cannell, Swanley, Kent.—*List of Roses, Bulbs, &c.*  
James Smith, Darley Dale, Matlock, Derbyshire.—*Catalogue of Trees, Shrubs, &c.*  
Kelway & Son, The Royal Nurseries, Langport, Somerset.—*Catalogue of Gladioli.*  
G. J. Alberts & Co., Boakoop, Holland.—*Catalogue of Fruit Trees, Coniferae, and Shrubs.*

## TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense. Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects,

and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return communications.

**BOOKS (J. H., a Subscriber).**—We do not know of any other publication of the kind, nor can we render you further aid in obtaining the manual we mentioned.

**ADDRESS (T. U.).**—We have the manual to which you refer, but the author appears to have changed his residence, and we do not know his present address.

**TRAINING FRUIT TREES (A. R.).**—The system of training to which you refer is termed the palmette verrier, and is very good. You can train as many branches as you like from each tree. If you purchase trained trees such as the one shown in your sketch, with five branches, they should be planted about 5 feet apart, the branches being trained on the wall about a foot asunder. Five branches only occupying a space of 3 feet 9 inches are too much crowded. See remarks on thin training in another column.

**GALVANISED WIRE (J. Otter).**—It has no injurious effect on plants. Where injury is done to the shoots and branches of trees it is generally the result of the wind chafing the branches against the rough surface that exists on some galvanised wire, and which may be felt by passing the wire through the fingers.

**AERIAL ROOTS ON VINES (D. W.).**—These are promoted by a moist atmosphere, and are generally the most prevalent when the root-action in the borders is defective. This appears to be the case with your Vines. We should renew the outside border and raise the roots, leaving the inside border to support the Vines until fresh roots are produced outside. You will find reference to compost and lifting Vines on page 340 of our last issue.

**SEEDLING PRIMULAS (H. E. F.).**—The flowers are distinct and novel, the prevailing colour being yellow with a faint green tint margined with white, the segments being deeply fringed. The value of the variety depends in a very great measure on the free-growing character and free flowering properties of the plants. Submit plants to a nurseryman.

**RENOVATING OLD APPLE TREES (C. B.).**—Remove all dead wood and much that is seriously cankered or otherwise obviously useless, but do not prune nor thin out the branches excessively. When the trees are thoroughly wet, as after a very heavy dew, dust them well with freshly slaked lime. A ladder will be necessary for the dusting to be effectual, and the lime must not be used sparingly; it will adhere to the branches and spurs, and will kill the moss. This alone will benefit the trees, and the removal of the surface soil from a good distance round the stems, and applying a heavy dressing of rich manure, will further benefit them. If the trees are very old it would be well to plant young ones, retaining the old until the young trees become fruitful. It is a mistake to allow old trees to become completely worthless before young trees are planted, yet that mode of procedure is very common in orchards and gardens. For destroying scale and American blight see reply to "N. J. M."

**EXHIBITING GRAPES (Young Gardener).**—If the stipulation in the schedule is "the best collection of Grapes in not less than four varieties" you cannot be disqualified for only exhibiting one bunch of each variety. Sloping stands should be made for the Grapes, an inch or two high in front and thrice that height at the back, the top or slanting portion being a few inches longer than the bunches, and wide enough for one or as many bunches as you choose. The back of the stand should be an inch above the level where the Grapes are placed, and in the angle so formed the lateral bearing the bunch can be secured. The stands should be covered with smooth white paper, and the Grapes as they are cut be firmly fastened in their places. The stands should then be placed in boxes and conveyed to the exhibition; and the Grapes should arrive there without a berry crushed or a particle of bloom removed. Many prizes are lost by rough and imperfect packing and a lack of care in transit to the shows.

**STARTING CYCLAMENS (Mrs. M.).**—Your house having a temperature of 55° to 60° will be suitable for the Cyclamens, and it will not be necessary to place bell-glasses over the corns. You must not water them every day, as there is little or no growth to appropriate the moisture, and the soil would therefore soon become soddened and sour. If the soil in the pots is very dry apply water copiously, two or three times if necessary, until the whole is moistened, then do not give any more water until the soil crumbles when rubbed with the finger. It may only be in that state once or twice a week if the weather is dull. The only safe rule for watering is to wait until the soil is rather dry, not by any means dust dry, and then to give sufficient tepid water to penetrate the entire mass. When growth has fairly commenced turn the plants out of the pots and remove as much of the old soil as you can without seriously disturbing the roots, and repot in fresh compost—light turfy loam two parts, decayed leaf soil one part, adding crushed charcoal and sand to keep the compost porous. Bell-glasses placed over cuttings should be wiped dry once a day, and as soon as the cuttings present signs of growth the glasses must be tilted, slightly at first, then admitting more air until they can be dispensed with entirely.

**LEVELLING AND RELAYING LAWN (Irish Subscriber).**—Dig the ground early in spring, turning in the turf, and in doing so throw the hills into the hollows, making the surface as even as possible. Allow it to settle until the early part of April, and again level the surface, and if the ground be poor a good dressing of well-decomposed manure may be given and pointed in. At the first prospect of rain afterwards sow a mixture of lawn grass seeds, raking the seeds lightly in and roll well down. Mow the first time with the scythe, and afterwards with the machine. A lawn we treated in that way last spring had a good appearance by June, and is now quite equal to another we laid with turf at the same time.

**IMPROVING TURF AMONG SHRUBS (Idem).**—Provided the shrubs do not include any of the Coniferae or others that produce roots near the surface dig the ground between the shrubs, removing any deep-rooted weeds; and in April sow lawn grass seeds, preparing the ground as advised for the lawn.

**PEAR TREES BLIGHTED (N. J. M.).**—No. 1 is infested with the Pear tree oyster scale (*Aspidiotus ostryaeformis*). Paraffin applied with a hard brush will destroy it, but it must be applied when the trees are at rest, and not be allowed to run down the stem to the roots; or a solution of nicotine soap, 8 oz. to a gallon of water, will destroy it, applying the mixture thoroughly with the brush; or 1 lb. soft soap to a gallon of water, adding a wineglassful

each of spirits of turpentine and methylated spirits. No. 2 is attacked by mildew. Take equal proportions of fresh unslaked lime and flowers of sulphur, mix with water, and apply it with a brush.

**HEATING PIT WITH PARAFFIN STOVE** (*New Subscriber*).—The "Economic" paraffin stove would answer your purpose, and cause no injury to the plants, providing, of course, they are not so near as to be affected by the heat. State the size of your pit, and write for particulars to A. E. Syers, Bowdon, Cheshire.

**CONSTRUCTING A PEACH HOUSE** (*J. B.*).—The top ventilation must be double that you are providing, or a light 2 feet wide opening the entire length of the house. A board will not answer, and to leave an opening at the top of a lean-to in summer would spoil the fruit should rain prevail when it is ripening. Glass should be used, especially as you propose planting trees against the back wall, as they will need all the light possible, the front trees not being allowed to extend too high up the front trellis, or the back trees will be so deprived of light as not to fruit satisfactorily. No manure must be mixed with the loam, and a twentieth part each of crushed bones and charcoal is sufficient. By all means put in a 4-inch flow and return pipe, the joints of which after they have been stopped with tarred rope may be made with Portland cement, which will answer quite as well as iron fillings. The best varieties of Peaches are Hale's Early, Dr. Hogg, Grosse Mignonne, Royal George, Noblesse, and Barrington. Nectarines: Lord Napier and Elruga.

**POTS FOR PANS (J. H. C.)**.—Place at the bottom of the pan a layer of large potsherds, concave side downwards, and over them a layer of smaller pieces, the depth of the drainage being regulated according to the capacity of the pan. Upon the potsherds should be placed some moss or the rough fibrous part of the peat to prevent the soil from being washed-in amongst the drainage. The soil must consist principally of peat with a small proportion of loam and abundance of silver sand thoroughly incorporated. Any of the following species would probably suit you:—*Asplenium Adiantum nigrum*, *A. fontanum*, *A. lanceolatum*, *A. marinum*, *A. Trichomanes*, *Cystopteris fragilis*, and *Trichomanes radicans*. The number of roots required would entirely depend upon their size.

**POTATOES** (*Constant Reader*).—We do not know of any varieties of Potatoes that will produce good crops in "ground almost coal ashes." Myatt's Ashleaf is a productive early variety. A good midseason round Potato is Schoolmaster, and a strong-growing late Kidney that has resisted the disease this year in a remarkable manner is Magnum Bonum.

**AQUA DULCIS BEAN**.—"J. R." wishes to know where he can obtain seed of this Bean.

**ROSE SELECTION** (*R. J. Clarke*).—If you send 3d. in postage stamps to the publisher, informing him that you require No. 869 of the Journal, it will be sent to you. That number contains the election of exhibition varieties.

**PANSIES** (*Amateur*).—They may be planted now in good yet well-drained soil, and if a little light gritty compost is placed round their roots it will be beneficial to the plants. They should be planted rather deeply, and means must be resorted to prevent them being injured by the wind. The soil should also be firmed round them at suitable intervals after frost, which sometimes raises them partly out of the ground. Very choice varieties we should place in pots, plunging in ashes in a cold frame, and there winter them, ventilating very freely during all favourable weather.

**SOIL FOR ROSES** (*L. T. Putney*).—Finely chopped clay or strong loam of any kind would be a good addition to your light soil. But if by removing the gravelly subsoil you can make the soil good to the depth of 2 feet by adding manure liberally, planting firmly, and giving heavy top-dressings of manure, we think the Roses will flourish. When the site has been thus prepared, we have seen Roses thrive very well in light soil. They should be on Manetti stocks. Liquid manure would be very valuable during the growing season, and the foliage must at all times be kept free from insects.

**HEATING A GREENHOUSE** (*Captain*).—Either a small hot-water apparatus or a flue would be much better than attempting to heat such a house as yours with petroleum stoves.

**STOVES FOR HEATING** (*C. Pearce*).—Such a stove as you refer to with an evaporating dish on the top to be used when required, and a pipe to carry the elements of combustion into the open air, would, we think, answer your purpose.

**BULB FARMS** (*J. G. G.*).—You might possibly obtain the information you require by writing to Messrs. H. B. Krelage & Son, Haarlem; or to Ant. Roosen, Overveen, Haarlem, Holland.

**REMOVING VINES** (*H. F. Foy*).—Vines five years old may be safely removed provided due care is exercised in taking them up and replanting. First, have the new border in readiness for their reception. The site being well drained, form the border 2 feet deep of turfy loam, a bushel of inch bones being added to each one-horse cartload of soil, and as much wood ashes and burnt soil as you can obtain. In taking up the Vines dig a wide and deep trench along the front of the border at the same distance from the base of the Vines as the rods are in length. Work from this trench with steel forks, undermining the roots and removing the soil carefully. As the roots are liberated turn them aside and cover them with mats to prevent them drying. Any roots that are punctured or injured should be cut off above the bruised part with a sharp knife. In planting place the roots straight and cover them an inch or two deep with prepared compost—half fresh loam and half wood ashes—with half a peck of bone dust to each barrowful of the compost. On this place 4 inches of the ordinary border soil, and surface it with 3 inches of good manure. In the spring let the Vines grow naturally—that is, do not "assist" them with fire heat, and they will soon be established in their new position. If you have to remove the Vines at once to the new garden before the leaves have fallen you had better cut them off, as they will have now assumed their autumnal tints, and their removal will not materially injure the Vines. If allowed to remain the evaporation from their surfaces might cause the wood to shrivel. Prune them in December.

**ANTIQUITY OF THE AUTUMN BERGAMOT PEAR** (*Lez*).—The following note by Dr. Hogg, in the last edition of "The Fruit Manual," refers to the supposed antiquity of this Pear:—"It has been stated by Switzer, and by some subsequent writers, evidently on his authority, that the Autumn Bergamot 'has been an inhabitant of our island ever since the time that Julius Caesar conquered it.' Possibly it was the Assyrian Pear of Virgil (*Quod a Syria translatum fuit*), say some commentators, and was, as may be deduced from thence, part of the furniture of the once celebrated and famous gardens of Alostinous." As this can be only conjecture on the part of Switzer,

and unsupported by any well-founded evidence, I think it extremely improbable. It is rather singular, notwithstanding this statement, that he is the first English author who mentions it. It is not noticed in the lists of Rae, Worledge, or Evelyn, nor in the very comprehensive list of Leonard Meager, of the fruits which were cultivated in the London nurseries in 1688. Neither is it even mentioned by Rae, Ralph Austin, Parkinson, nor William Lawson, and, indeed, by no author is it recorded prior to Switzer himself. Parkinson speaks of the *Winter Bergamot* as 'of two or three sorts, being all of them small fruit, somewhat greener on the outside than the summer kinds; all of them very delicate and good in their due time; so some will not be fit to be eaten when others are well-nigh spent, every of them out-lasting another by a month or more.' But of the Autumn Bergamot we have no early record."

**NAMES OF FRUITS** (*J. B.*).—1, Beurré de Capiaumont; 2, Louise Bonne of Jersey; 3, Beurré Diel. (*H. Handley*).—1, King of the Pippins; 2, Domeslow's Seedling; 3, Beauty of Kent; 4, Cellini; 5, Ribston Pippin; 6, Warner's King. We cannot name the others. (*J. T.*).—The Apple is Gloria Mundi, the Pear Beurré Clairgeau. In consequence of Dr. Hogg's absence, fruit sent by some other correspondents cannot be named this week. (*F. M. L.*).—The Pear is, we think, Beurré Clairgeau. The Apple we cannot name, it appears to be an imperfect specimen.

**NAMES OF PLANTS** (*J. B.*).—The specimen was insufficient for identification. We cannot undertake to name a plant from a single leaf, unless it possesses some marked characters. (*H. G. M.*).—It is *Quercus coccinea* (the American Oak), and may be brighter another year. (*Daf*).—1, *Salvia splendens*; 2, *Pteris serrulata*; 3, *Saxifraga cernitoea*.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### NITRATE OF SODA AND ITS USAGE AS A MANURE.

THIS is a substance which is every year becoming more extended in its application as manure. It is, however, a powerful stimulant to vegetation, and requires great care in its application, and may be said to be a good servant but a bad master. It is necessary, therefore, to use great caution and intelligent inquiry before its application can be ventured on with safety. At the same time it is fortunate that a great many experiments have been carried out which will enable the home farmer of the present day to commence using this manure with some confidence. It is our intention to illustrate its effects upon the various farm products, not only from our own practice, but also from the practice and theory of the most intelligent men of our time. The most eminent of the experimenters was first the late Mr. Pusey, who in 1862 was President of the Royal Agricultural Society of England, and who for some years acted as the editor of the Society's "Journal." Mr. J. B. Lawes, and also Dr. Voelcker have both contributed, together with many other men, by experiments and by expounding the chemical value of this manure, to bring it before the farmer in a manner which will enable him to use it under varying circumstances with safety and advantage as a fertiliser for the various productions of the farm. Artificial manures had been used so extensively, especially guano of different sorts, that it was feared at one time that the supply of this article would not be available for many more years; and at present, although it can be obtained, it is not so good or plentiful as it formerly was. It is fortunate, therefore, that nitrate of soda is now available to almost an unlimited extent.

It was in the year 1831, however, that nitrate of soda began to attract most attention, for a cargo imported realised £36 per ton. From that time the importations have greatly increased every year, so that the quantity for use at present is enormous. The production of nitrate of soda is almost exclusively confined to the province of Tarapaca in Peru, and chiefly in the pampas of Tamarugal, running north and south about eighty miles, and about twelve miles from the western shore. This vast plain, situated 8000 feet above the level of the sea, is at the foot of the gigantic Andes Mountains. The district is a rainless one, which is accounted for from the fact that the trade winds blowing unceasingly from east to west, and thus having to pass over the Andes, the air is thereby deprived of all its moisture. The salt exudes from the ground, and is in some places from 7 to 8 feet in depth. It is sometimes found quite pure, but when not so its impurities are extracted by dissolving in water and evaporating to dryness, either by the heat of the sun or by fuel. The chief port from which the nitrate has to be embarked is Iquique, a distance of ten miles as the crow flies from the nitre beds. Formerly

the nitrate was conveyed upon the backs of camels or mules to the port, which, together with the expense of purification, made the total cost of production excessive. Since then a railway has been constructed, and we are now enabled to obtain the nitrate at a more reasonable price.

Nitrate of soda, however, requires judicious application both as to quantity and the time of usage, for instead of its proving a valuable manure it may prove under certain circumstances a serious injury to the various crops which it may have been the intention to improve. In order to show this matter in a practical manner we shall lay before the home farmer a number of experiments both of success and failure to illustrate our subject, at the same time giving reasons in detail for each. We will take Mr. Pusey's experiment first, who says, "My land being in good order, but the barley having been sown very early—viz., in February, it had suffered from the effects of unusually sharp frosts. A dressing of nitrate of soda was given of 42 lbs. per acre, with twice the quantity of common salt. A strip of the land was left undressed. The barley crop soon recovered itself, and upon threshing the crop the undressed portion gave only 40 bushels; the top-dressed portion, however, yielded 47 bushels, an increase of 7 bushels per acre, the value of which was 26s., the cost of the top-dressing being only 6s. 4d., the result being therefore an advantage of 300 per cent." Another experiment between guano and nitrate of soda was tried in Windsor Great Park. The quantity used was 2 cwt. of Peruvian guano as compared with 2 cwt. of nitrate of soda, one experiment being on high undrained land and the other on low-lying meadow land. The result in each case proved favourable to the guano. This advantage, however, was most probably due to the fact that the heavy rains which prevailed at the time may have washed down the nitrate below the roots of the grass; nitrate of soda being so extremely soluble, requiring less than two parts of water to dissolve it. Experiments made by Mr. Hope of Fenton Barns an eminent Scotch agriculturist, however, confirmed the Windsor trial. He found that 90 lbs. of nitrate of soda and 180 lbs. of Peruvian guano as a top-dressing upon clover and rye grass gave better results than by using nitrate alone or than double the quantity of guano by itself. Now the lesson taught here is that the nitrogen of the nitrate of soda required assistance from the phosphates supplied in the guano, and probably from the potash contained as well. We know that in dry seasons a loss of ammonia has attended the application of guano, and the remainder has not been rendered soluble; and as upon grass land the guano cannot be harrowed in, it is better to use nitrate only, with the addition of soluble phosphates and, if required, potash. In dry seasons we know from our practice that such top-dressings of nitrate of soda are preferable to guano.

Mr. Pusey in one of his experiments with nitrate of soda as compared with guano as a top-dressing for wheat found the following results:—The undressed portions gave 21 bushels per acre; 2 cwt. of guano gave 24 bushels per acre, being an increase only of 3 bushels; 1 cwt. of nitrate of soda with the addition of common salt gave 25½ bushels per acre. This, however, occurred in a dry summer, and the proportion of increase was hardly fair to the guano, but was one of the most successful applications of nitrate of soda ever recorded. A valuable experiment was made by Mr. Pusey upon a sandy loam soil, because it proved a total failure as regards the autumnal sowing, whilst the spring dressing—consisting of 2 cwt. of nitrate with 4 cwt. of salt—gave an increase upon ½ acres of ¾ quarters of grain, which, deducting the cost of manure, gave an increased advantage of £8. The autumn-sown manures evidently failed in consequence of the autumnal rains which prevailed at the time. Another comparison between the value of guano and nitrate was made by Mr. Hope in an experiment, with the following results:—1 cwt. of nitrate mixed with common salt gave 87½ cwt. of straw and 58 bushels of wheat; 3 cwt. of guano gave 84 cwt. of straw and 49 bushels of wheat. The unmanured portion of the field gave 88 cwt. of straw and 89 bushels of wheat. In this case the cost of the guano exceeded that of the nitrate by 12s., yet the increase of grain from the nitrate was 4 bushels. A very successful practice of the use of nitrate of soda in the growth of mangolds is made by a home farmer whom we know. His plan is, after having prepared the land well and applied a liberal dressing of farmyard dung ridged-in on the baulk, as soon as the mangold plants are big enough to hoe he applies ½ cwt. of nitrate at the time of hoeing, and the same again sown broadcast at the second hoeing, about the same quantity of common salt being used with the nitrate at each application. This to our mind is capital farming, and insures, as far as manures can insure, an abundant crop of roots. A friend of ours on the first attempt to use nitrate of soda for his wheat sustained a loss rather than a profit, for he applied 2 cwt. of nitrate per acre as a top-dressing in the spring, and at the time the wheat was well out in ear it looked like yielding thirteen or fourteen sacks per acre; but heavy rains commencing on the 15th of June had the effect of lodging the crop, and it became very much blighted and only yielded a moderate crop of very thin and light grain. Now this is an instance of failure entirely because he did not know how to use the nitrate, for in case half the nitrate had been used with 2 cwt. of superphosphate and 2 or 3 bushels of common salt his crop would have

been stiff in the straw and free from blight in all probability. This failure, however, taught him a lesson which he was not slow to learn, for he has since succeeded well with nitrate in admixture with mineral manures and salt.

(To be continued.)

## WORK ON THE HOME FARM.

**Horse Labour.**—This will now be very heavy, in consequence of the late seed time. Where, however, the wheat is sown after fallow or fallow crops much of the land intended for wheat cannot be sown, for it has been in some cases utterly impossible, particularly on strong loams, to make the naked fallow, or prepare the land in a clean state after fallow crops. We have lately been over strong land farms on the chalk hills as well as vale farms where the fallows have not been made, although sufficient horse and steam power have been used to have made clean fallows in an ordinary season. In consequence the land wheat cannot be sown; but the land will probably be held over and tilled for barley in the spring, and should the weather be favourable at that time no doubt the barley crop will pay as well or better than late-sown wheat. In those cases where but little couch is left in bunches we prefer to fork it out previous to the sowing of wheat or any other crop, as we find that the first expense is always the least, and particularly when a little hand labour saves the expense of costly horse labour. The variety of wheat we have recommended on the best and early dry soils this year is the Essex rough chaff upon lea ground in high condition, and the best old wheat will be found much surer to vegetate than the produce of last harvest, which did not ripen properly. This sort of wheat grows very short and stiff in the straw, even on the best soils and under the highest cultivation. About 2½ bushels of seed will be sufficient until the middle of November, after which time 3 bushels will be none too much, particularly on lea ground, where the slugs are likely to attack the plants, and it is this year perhaps better to sow rather late than otherwise, with the view of avoiding these enemies. As, however, the potato land will now be ready for seeding it will be better to sow this land before the clover lea, and to dress this with 3 cwt. of Peruvian guano, the farmyard and box dung having previously been ploughed-in on the ground. It is a practice which we can recommend to the home farmer after the 1st of November to plough and sow the land simultaneously—that is, on the same day, for in case of waiting to sow a whole field rain or frost is pretty certain to intervene, either of which prevents the land being seeded in such a good state as when sown after the plough. On the potato land we recommend the Morton's red-strawed white wheat, or in case the climate is not adapted for white varieties we sow Nursery or Golden Drop, as either of the varieties are sure to stand the winter better than white varieties, and in case of being injured and suffering by loss of plant they will tiller so much as to make up almost any deficiencies.

**Hand Labour.**—This will still be employed in spreading manure on the land for ploughing in for wheat, also in making out the water furrows after sowing the wheat. On all strong flat-lying land there will be some work of this kind, and it is of importance, because the water furrows should always be made several inches deeper than the land furrows, and when they are thus made they do not so quickly get filled, or partly filled, with the grit which washes into them. Where there is not a good fall for the water the fall should be made by taking out the earth deeper where required. All the pastures on which cattle have been fed during the summer should have the bunches of grass and rushes, &c., cut over with the scythe preparatory to the trenching being done. The water meadows will now require to be trenched, making out both the carriers and drawing trenches with care, as they will be put under irrigation soon, and the sooner the better. The plashing and laying of hedges, making out ditches, and banking will be the first work after wheat-sowing is completed; the farm roads also will require little or no repairs if they are kept a proper shape by keeping the centre of the driftway highest, and remove all accumulations at the outside by making out the sides or water tables. These materials will be useful if carried to heap as compost for various purposes, such as affording earth for placing at the bottoms of pigsties, cattle boxes, cattle sheds, and yards after it has been mellowed in heap for five or six months. The taking-up and storing root crops will still be going on; and when the horse labour is required, particularly in wheat-sowing, the roots may be heaped in the field in a temporary manner, and subsequently carted away to heap or store. The odd horse will now be required in daily carting some cabbages or rabi on to the pastures for the dairy cows and young stock, as the grass is now both short and stale. The shepherds will now be required to look to the sheep's feet daily when they are suffering from lameness, and it prevails to a great extent in various counties and districts, especially where the land is wet and cold. We hear that the early lambing horned Dorset and Somerset ewes are now dropping their lambs, and that they bring as many or more twin lambs than usual, some of the flocks having yeared more than half twins. We hear also that with the ewes they are strong and healthy, but

not quite free from lameness, because this kind of stock always suffer from the foot rot more or less in the winter months.

### AUTUMN ROOT SHOWS.

SEVERAL of the larger seed firms stated in their spring catalogues that as usual they should hold their autumnal root shows and give their usual prizes; but I find one firm has already given notice that on account of the bad season their show will not be held this autumn, and I understand some of the others are undecided and wavering. I think this should not be so. If the shows are not held many intending exhibitors will be disappointed. I maintain when customers are induced to buy seeds from catalogues issued in the spring, and no conditions attached, stating certain prizes will be given for exhibits at their autumn root shows, it ought to be carried out let the season be good or bad; all exhibitors will have the same chance, and have to contend against the season. I have not yet heard or seen any schedule of prizes for the autumn root shows, and if they are to be held it is time they were out.—NEMO.

### EXHIBITION BASKETS.

MANY are the risks to which poultry are liable in their journeys to and from exhibitions. We can remember when they were more, and when the method in which they were sent must have been extremely troublesome to those in charge of shows. Formerly rough open-work hampers were frequently to be seen with valuable birds in them addressed to exhibitions; the wind whistled through them, while the poor birds were left for hours exposed to all the draughts of railway stations. They were of every conceivable form and size, generally rounded at the top, so that one basket placed on another would be sure to roll off; or sometimes they had no lids, and were simply covered over with canvas or sacking; in this case a heavy weight on the top always endangered the lives of their occupants, and a troublesome little job awaited those who, at the repacking of the birds, had to sew up the coverings. Such awkward and dangerous conveyances are now generally discarded save at rustic local shows. A great uniformity of baskets has of late been observable, inasmuch that we always find difficulty in distinguishing our own at the close of a show. Nearly all careful exhibitors send their birds in much the same kind of baskets, of open wickerwork, round, and well lined and covered. In such baskets tails are not broken, and a slight tumble is less likely to do serious damage than when there are angular corners. They have, however, their drawbacks; among others, they are easily rolled. We heard not long ago, on the highest authority, that at the Clapham Junction station, just before or after a Crystal Palace show, they were trundled down the platform by dozens like barrels. We have, when going to a show in the eastern counties, seen a high covered van arrive at Bishopsgate with a perfect stack of them strapped over the top on their sides. There are risks, too, from the thin coverings not fully protecting the birds from wet or anything accidentally upset over them. A celebrated cup bird of ours once had to be sent away from the Crystal Palace on account of illness before the close of the Show. His basket was found, and revealed the fact that at the aforesaid terrible Junction a bottle of blue ink had been upset on it, but by some lucky chance had trickled harmlessly down the side. Much room is necessarily wasted in packing round baskets; the ordinary baskets, too, are liable to be broken into by dogs. A dog show is not infrequently combined with a poultry show, and the same railway vans convey the four-footed and feathered exhibits. Some years ago a most famous Light Brahma cock belonging to Mr. Pares was worried by a dog in the train, after which that gentleman always sent his birds in iron-clad baskets, doubtless at considerable cost. A not less famous White Cochon hen of Mr. Woodgate's met, if we mistake not, a similar fate. Such accidents are now very rare, but still possible.

The Poultry Club has, as we lately announced, offered liberal prizes for the best exhibition basket, to be competed for at the Crystal Palace Show. We do not pretend to describe the perfect basket, or to forestall the ingenuity of the basket makers. We only wish to point out some of the disadvantages of the common type of basket, in the hope that they may be remedied. There is a handle difficulty. We have had baskets with handles on the top, then they cannot well be packed one over another. We have had them with handles on the sides; these the porters seize, throwing the baskets on their sides. We have had them without handles at all, when they are rolled or lifted by the top wickerwork till it breaks. We are inclined to think that tops should be made peculiarly strong, and holes left on each side of the centre cross wicker bar, into which the hand can be thrust as into a handle, but without the inconvenience of a handle rising above the top level. We have before us a circular issued by the Poultry Club concerning this competition of baskets. In it we read, "The Judges will be instructed to take into consideration, in awarding the prizes, the strength, lightness, durability, and facility of transit of the baskets." We trust that with these hints basket makers will not fail to produce something really novel and practically useful at

the Palace. In these days exhibitors are very properly allowed to send several birds in divided baskets to almost every show; this widens the field for ingenuity in their construction. If exhibitions are necessary for the improvement of poultry, or if we promote them solely for our own amusement, we are bound, as fanciers, to do our best that the birds which we exhibit may suffer as little discomfort as possible in their travels.—C.

### THE POULTRY CLUB.

A COMMITTEE meeting of the Poultry Club was held at Oxford during the Show in a room kindly lent by the Committee of the Show. The Rev. G. Raynor, Hazeleigh Rectory, Maldon, was elected a member. The further consideration of the disqualification at Ross was postponed till the next Committee meeting. The disqualification at Hemel Hempstead was again considered, and after communications had been read from the Secretaries and Judge of the Show and from the owners of the drake the following resolution was passed:—"The Committee of the Poultry Club accept Messrs. Chadwicks' explanation of the object with which the wing of their drake disqualified at the Hemel Hempstead Show was cut, and entirely exonerate them from all fraudulent intention in the matter; at the same time the Committee advise Messrs. Chadwick not to show birds whose plumage has been trimmed for any purpose whatever." It was agreed that the general meeting shall if possible be held at the Crystal Palace Hotel at 4.30 P.M. on Tuesday, November 18th.

PRICKLY COMFREY *versus* RABBITS.—At page 820 information as to whether hares and rabbits eat this plant or not is asked for. Last spring I planted a quantity of it here in sand about the seashore where hares and rabbits are abundant, and although it is now a considerable height they have not eaten a leaf of it.—A KITCHEN GARDENER.

### VARIETIES.

At the Council Meeting of the Bath and West of England Society and Southern Counties Association, held on the 28th ult. at the Grand Hotel, Bristol, Sir J. T. B. Duckworth, Bart., in the chair, it was resolved that the Exhibition at Worcester next year shall commence on Wednesday, June 2nd, and close on Monday, June 7th. The stock prize sheet was settled upon the same scale as that at Exeter, but the list of prizes offered for poultry was altered to make the single-bird system uniform throughout. A communication was read from the Hon. Local Secretary at Worcester, enclosing a copy of a letter from the proprietor of *Berrow's Worcester Journal*, offering a donation of one hundred guineas, to be distributed as special prizes to *bona fide* tenant farmers of Worcestershire for excellence in agriculture, as premiums for cattle, &c., or in such other way as the Committee of the Worcester Society may think best calculated to promote a friendly and beneficial rivalry amongst the agriculturists of the county. The reading of this letter was followed by considerable applause, and a fortnight's grace was allowed to the Worcester Local Committee for the preparation of their special prize list. In response to communications received from the Secretary of the Tunbridge Wells Farmers' Club, a deputation was appointed to visit that town for the purpose of inspecting a site which has been offered for the meeting of 1881.

THE Dorset County Poultry, Pigeon, and Cage Bird Show will be held at Dorchester on the 14th and 15th January, 1880. Entries close January 1st.

WE learn from statistics published by the Italian Government that the value of eggs exported from Italy during the late financial year amounted to no less a sum than 9,000,000 lire! The fancy for highly-bred stock seems spreading fast over the civilised world. Some years ago agricultural shows were started in North Italy, where we should expect them to thrive. In truly continental style the prize oxen decorated with ribbons were led in procession round the old town of Aosta headed by a canon of the cathedral! We now learn that a show has just been held so far south as in the sleepy Neapolitan town of Caserta. An exhibition of poultry was included in this programme.

MESSRS. JAMES CARTER & CO., High Holborn, London, announce that their annual Show of farm and garden roots will be held in the Agricultural Hall, Islington, on November 21st. Five cups, value £10 each, are provided for Swedes and mangold wurtzel, and many prizes for various other farm roots; also for twelve dishes of vegetables, and potatoes and onions grown in gardens. Messrs. James Gibbs & Co., and Messrs. Ohlendorf and Co., offer silver cups at the same Show for roots (the products of Carter's seeds) grown by the aid of their manures. The latest day for receiving entries for the Show is November 18th. The chief prizes can be had in money or silver plate at the option of the winners. The number of the classes in the schedule is twenty-three, and the value of the prizes offered exceeds £180.

FLIGHT OF WOODCOCKS.—Numerous flights of woodcocks are reported as passing over Jersey from the north, making their way to the warmer climate of France. Many have been

shot on their passage, and are found to be large and plump birds. The early departure, some few weeks before the usual time, is said to denote an early and severe winter.

— **THE SALE OF MILK.**—The "barn gallon" is an institution to which the attention of "informers" may be usefully directed. What it accurately is no man can tell, and the milk-seller is apt to make shipwreck in the fog. One thing, however, is certain—that it comes exactly within that provision of the Weights and Measures Act, which specifies certain imperial measures alone receiving legal sanction. A "barn gallon" is said to be two imperial gallons and a pint; but it is the town buyer who provides the churns in which the milk is delivered to him, and the churn makers say that the "trade" require measures which are so many barn gallons plus an indefinite added space, capable of considerably enlarging the contents beyond the declared multiple of 17 pints. Why should not milk, like other goods, be sold by weight? The quality is cared for by the legislature, and inspectors are down upon anyone who adds water to his milk. The quantity is quite as much a matter for inspection.—(*Agricultural Gazette.*)

### BEES.

[A lecture delivered before the Wimbledon Gardeners' Association by Mr. Ollerhead.]

AMONGST the many pursuits that one could be engaged in during leisure moments, few are more interesting or lucrative than the management of bees. To search into the mysteries of the hive, watch the queen or mother bee laying her eggs, her attendants following her, the progress of the larvae, the formation of cells, particularly the queen's, the storing of honey, and the various other work conducted with such wonderful regularity and discipline, when fully explained cannot fail to interest. On the other hand, the profits accruing from a few hives of bees in a favourable season when properly managed are astonishing. Mr. Pettigrew in his most valuable "Handy Book on Bees" tells us that his own profits altogether from 1870 to 1874 were upwards of £220, after deducting an annual expenditure of 10s. per hive. It must not, however, be expected that this is realised without a certain percentage of care and trouble. To suppose that simply because you procure a hive of bees and set it on a stand in the garden that your care and outlay is at an end, and that nothing but profit must follow, is quite erroneous. It is true that in favourable seasons the bees will take care of themselves to a very great extent and gather in stores of honey. Such is not the case in a season like the past, because there has been very little honey or nectar in the flowers, and the excessively wet weather has prevented the bees collecting what little there was to be obtained.

I am prepared to hear sad news from the bee-keeping community next spring. Depend upon it, only they who have paid unremitting attention to their bees this year will be able to commence next season with advantage. Feeding, feeding, feeding all the year or nearly so has been the principal work in the apiary during the year 1879; in fact I can hardly tell you to what extent I have been feeding the bees unless I look up my memorandums very carefully.

Last autumn I carefully prepared twenty hives for the winter—viz., four Pettigrew's, three Neighbours' cottage hives, two Stewartons, five Woodbury's, two Carr-Stewartons, and four double Neighbours'. The latter were Neighbours' cottage hives—hives with the crown board knocked out, and the super cover attached to the body hive so as to make a good-sized one, as I am persuaded from experience that all Neighbours' small cottage hives are too small, and only adapted for selling small swarms for profit. The whole twenty hives referred to passed through the winter safely, and strong, except one, a Stewarton, which on being examined early in March was found very weak. This was united to a Neighbour hive close by. The long cold spring was very unfavourable for breeding, and at the end of April the bees were no stronger than they were early in March. This was particularly noticeable in the wooden hives, although the crown boards were removed and the hives well covered up with housemaids' flannel and other warm material. I may also state that bees as a rule in straw skeps work earlier and later than those in wooden hives.

This year I have had to drive two stocks infested with foul brood, the cause of which I attributed to the vicissitudes of temperature. A few warm days caused the bees to expand and cover the combs. Stimulated by a little slow feeding the queens exercised their laying powers; the eggs were set and larvae were hatched when the cold wet weather caused them to huddle up into closer quarters, leaving portions of the brood uncovered, causing a chill, followed by death, putrefaction, and foul brood. We are told that salicylic acid if properly applied is a safe and certain cure, but I think the best cure is to drive the bees into a clean empty hive, feed them for a couple of days, drive again and unite to a healthy stock, and scald the hive they were in two days in readiness for further use. I have generally had my hives free from foul brood by keeping clean combs in them, and by not keeping old stocks too long. I have many times cut out small portions of infected comb, and thus prevented further spread of disease. I never wintered such stocks, but united them to others in the autumn or fed them with sugar.

The bees in this neighbourhood could not obtain food sufficient to keep them in existence this year until the limes came into flower, then there was a glut for a few days; and on July 31st, the limes being over or nearly so, we took them a few miles out to the heather; but the continual wet weather prevented them gathering what little nectar there was in the flowers, and after waiting patiently for a favourable turn in the weather, but without realising it, we fetched them home September the 9th much lighter than when we took them away. We examined them thoroughly, and found a very little brood in the straw skeps and none at all in the wooden hives.

Our next task was to unite some of the stocks to swarms, destroy the old queens, and prepare them for winter by liberal feeding until each stock has sufficient food to last them until next March. Thus we have prepared and reduced the number of our hives to fifteen. I may also here state that I fed the bees very slowly until nearly the middle of this month so as to secure a late hatch of bees, as on these depend the strength of the hives next year. As I must remind you that it has been ascertained that no worker bee lives longer than five months at any period of the year, and in the height of the busy season their existence is much shorter, also that during the winter season little or no breeding in the hive is going on to keep up the population. Thus the old bees keep dying off, and there is none hatching out to take their places, and this is why a hive strong in bees in autumn becomes much reduced by spring. In fact I know of several instances where hives strong in bees last autumn passed through the winter safely, but the bees died in April. This I attribute to the want of slow feeding last autumn to secure a late hatch of bees, and also to the want of feeding early in March and onwards, keeping the hives well wrapped up and cosy to secure early brood in spring. If the queen finds no food coming into the hive she will cease to lay, and the workers finding a famine imminent will cast the young out of their cells. All bee-keepers that wish to prosper will not fail to pay special attention to this important point.

Thus you see the art of bee-keeping does not merely consist of buying a hive of bees and putting them in the garden to look after themselves, but there is care, attention, and a little knowledge required if you wish to succeed. There is much superstition existing relative to bees. Some say they dare not go near them as they would be sure to get stung. Well, I would not advise any timid person to approach a hive without a veil, and then under proper tuition the most timid one may overcome and do anything they wish with their bees. Other people will tell you if the bee-master dies, and you do not tell the bees or rap the hive and put a black rag on it, the bees will all die, but this is ridiculous. The fact is the bees die from neglect, in some instances from want of judicious feeding, while in others the bees take care of themselves till foul brood seizes a colony. This is pillaged by its neighbour hives. The disease is spread until they are all contaminated, and ultimately succumb to the pestilence, and then the would-be bee prophets tell you, "Oh! I told you would lose them," &c.

If you wish to enter into bee-keeping and know nothing about them, consult a friend or neighbour that does, and obtain his advice and assistance in buying a hive. The price will of course depend on circumstances, such as the time of year and the kind of hive the bees are in, and also the locality. You could hardly expect to obtain a hive in Regent Street at the same price as you would pay on Salisbury Plains or the wilds of Dartmoor. If you ask what kind of bees you should buy, I answer, Blacks of course. After many careful trials in testing the superiority of the Ligurian over the black bees I have come to the conclusion that Ligurians are fancy bees at a fancy price. My last experiment was made several years ago, which resulted as follows:—Two swarms as near 7 lbs. each as possible were placed into two hives exactly the same make and about 5 yards from each other. They were fed in exactly the same proportions and treated alike in every way until the end of the following season, when the stock hives with their swarms were weighed. Contents of Ligurian stock hive 71 lbs., first swarm 70 lbs., second swarm 21 lbs., total 162 lbs. Contents of black bees' stock hive 59 lbs., first swarm 78 lbs., second swarm 82 lbs., total 164 lbs.; credit to the black bees 2 lbs. Some people will tell you that the Ligurians work earlier and later, wet as well as dry weather, are more prolific, and have a host of other good properties. Well, such may be the case, but I for one so far have failed to realise them. I must confess that I like to see the Ligurians in an apiary and paid 11s. for one last June, but it was not because I expected to realise any advantage from her, it was merely for the sake of having a pure one in the apiary.

We now come to the question of hives. A great diversity of opinion exists as to which is the best hive to use. The old straw skep, the 20-inch Pettigrew, the cottage Neighbour, the Woodbury, and Carr-Stewarton, are each good in their way, but to my mind the best hive for quantity of honey, either in the comb or in supers, is the Pettigrew. The hive itself has capacity for a prodigious quantity of honey, while sectional or other supers may be piled on the crown to any extent desirable. Neighbours' Crystal Palace straw skep is also a capital hive. Of the wooden hives in use none please me so well as the old Woodbury; from it you can obtain honey in the frames or in side or top supers.



These three are the only hives I would recommend to anyone; but all apiarians as a rule have their pet hives, particularly the manufacturers. I was highly amused when visiting the Show at Kilburn by a vendor offering to show me the only hive that had produced British honey in the Show. Now, mind, it was the hive that had produced it. I of course availed myself of the opportunity, and saw what I considered was two Woodburys piled one on the other, with excluder zinc for side and top supers, and a few other complications of the manufacturer completed the wonderful hive for which the modest sum of two guineas was asked. The zinc had round holes in it, and I inquired if he never found any bees die inside the zinc. "Oh, no!" was the reply. I told him my experience was the reverse. He attributed it to the way it was put on; but I can only say they will die put it on how you may, and the living bees cannot carry the dead through it. I fully expected he had Ligurian bees, but it turned out he had fifty hives of black bees. Having satisfied him that the bees, not the hive, gathered the honey, I inquired what they gathered it off. "Forty acres of lucerne," was the reply; "but mind you," says he, "it's no use unless you put two swarms in one hive, fill your hives with bees, and then you will obtain honey." This reminds me of a man who boasted to me of a wonderful super of honey he took last year. "Was this the produce of one swarm?" "One hive," says he. "But were they the offspring or swarm of one legitimate hive or stock of bees?" "Ah, well, no, I cannot say that." "Tell me the truth, now; how many swarms did you put together?" "Well, I wanted to do something grand, and I don't intend to tell everybody, but I put seven swarms together." "Oh, well, if you cut up the super into seven it is not much after all." So you see it is not they that cry the loudest that have the most to sell.

There is no doubt that bees will do well in almost any hive provided they are properly managed, but the fewer obstructions you have in a hive the better it is to my way of thinking. We have heard of the wonderful feats of the "KENTREWSHIRE BEE-KEEPER" with his Stewarton hives, but I can only say they are no better than any other; in fact, I do not like them so well as a Woodbury. I have three sets of boxes and supers now never been used, and will be very pleased to sell them for what they cost for making—not charging for the materials. I have visited every show of the British Bee-keepers' Association, and have so far failed to find any hives better adapted for the profitable management of bees than the Pettigrew, Crystal Palace straw skep, and the common Woodbury, and I think, it will be a long time before we find better in the market. I took 110 lbs. of honey out of a Pettigrew three years ago, and 97 lbs. out of another, which was considerably more than the returns from any of the other hives on the same ground and under the same treatment.

One word now as to supers. Doubtless, the worst kind of super for bees is a glass one, and the one that they take to most freely is made of straw. Supers are made in a great variety of shapes and forms. The best side box, super, or section that has yet come under my notice is one made in America, and was exhibited by Mr. Newman of Chicago, at Kilburn and South Kensington this year. They are all in one piece, and so contrived that a bit of guide can be run in them and then folded so as to form a section about 4 inches square by 3 inches in width, the whole held together by one small French nail, a bit of gummed paper, glue, or anything of the kind, and are admirably adapted for working in frame hives. Another good form of section is Abbott's; there is some filled with honey, others empty. These may be used either inside the hive or as supers on the top, with bits of tin to keep them straight. These are very good supers in their way, I have used many of them. There is also Neighbours' Crystal Palace prize divisional super, but I do not like it at all. The bees do not always build straight in them, so that when they are cut through you break the crooked combs and so make the honey run or "bleed," as you will see in this super before you. The comb is not straight, it was put on the hive with guides just as received from Neighbours of Holborn.

[At the close of the address Mr. Ollerhead submitted examples of the hives he had referred to, explaining their essential features, and pointing out the advantages and disadvantages pertaining to them. He also submitted the various appliances employed in the apiary, including the different articles for feeding bees, guide comb, queen cages and mode of using them, and gave examples of supering and of uniting stocks. Supers of honey of faultless quality were further placed before the meeting, also imperfect supers, and some pieces of comb containing foul brood were also handed round for examination. Much attention was paid to the address, and the various object lessons at the close of it, and Mr. Ollerhead was warmly thanked for his interesting and instructive lecture.]

### OUR LETTER BOX.

PEKIN AND CATUCA DUCKS (N. E.).—These answer admirably for domestic purposes: both sorts are very hardy and cater well for themselves. Pekins surpass all other Ducks as layers, and Catucas are nearly as good. As to appearance Pekins are fine and noble-looking birds. Catugas have a lovely green gloss, and are when in high condition most attractive. We

know a flock of them which live in the hardest way in a small park in Berkshire and are found very prolific. Their condition and plumage is just at this season very fine, and next to the wild Mallard we consider them the best Ducks for the table.

LANGSHAN FOWLS (*Idem*).—We cannot pretend to give the points of Langshans, for their admirers are not consistent as to what points they desire. We believe the breed to be hardy and prolific and suited to your requirements, though for table fowls we should not select an Asiatic breed. In spite of all said to the contrary by the enthusiastic admirers of Langshans, we believe them to be nearly allied to Cochins. All this family of fowls is wont to put more flesh on to the legs than on to the breast.

SMALL versus LARGE FARMS (L. P.).—Small farms either in France, Belgium, or England, will pay better and yield more rent to the owner than larger farms, but they must be situated near to the large towns or railway stations, and used for the growth of vegetables, fruit, and other garden produce; it could not answer in England to use small farms for ordinary farming such as growth of cereals and roots for feeding fat cattle or sheep, but upon some small farms a portion under spade culture and some in pasture. Milk-selling may answer near to towns. It is, however, a question so intimately connected with soil, situation, and aspect, that it would not answer in general to divide the large farms into those of twelve to fifteen or twenty acres, because it would necessitate cottages and farm steadings being built. The small occupations answer well near towns or stations, and let readily from 40s. to 80s. per acre with house and buildings; but we have not the population which have been accustomed to it to occupy small farms like France or Belgium, because theirs has been under such a system from time immemorial, the same succeeding the father often from generation to generation. If offered in this country small farms would find tenants in such situations as above named.

FEEDING BEES (*Bary*).—As the weather is mild in your district you had better continue feeding the hive for another week, when your letter shall be answered more fully.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.				Rain.	
	Barom. at 39° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.		On grass.
1879. Oct and Nov.	Inches.	deg.	deg.	N.N.E.	deg.	deg.	deg.	deg.	In.	
We. 29	30.183	46.0	44.8	N.N.E.	48.9	50.1	45.1	49.8	44.7	0.038
Th. 30	30.239	49.4	45.6	E.	48.4	52.4	45.6	59.3	45.8	—
Fri. 31	30.209	47.4	44.1	N.E.	48.6	50.8	46.8	58.0	44.7	—
Sat. 1	30.068	44.0	42.6	N.E.	48.0	49.7	42.8	74.1	48.6	0.011
Sun. 2	30.185	47.8	34.8	N.	48.5	44.3	32.4	70.0	28.8	—
Mo. 3	30.356	41.3	40.6	N.N.W.	44.9	45.7	35.6	68.9	81.6	0.010
Tu. 4	30.538	45.3	43.7	N.N.W.	45.3	47.4	40.9	50.8	41.1	—
Means.	30.252	44.5	42.3		47.3	48.8	41.2	62.5	39.9	0.033

### REMARKS.

29th.—Dull dark day, drizzling rain; fair evening.  
30th.—Overcast and dull but dry day, rather windy.  
31st.—Cloudy generally, glimpses of sunshine at 2 P.M.; moonlight night.  
November 1st.—Slight rain in early morning, fine after 9 A.M., sunshine at 1.30 P.M., cloudy after 3 P.M., rain at 5 P.M.; damp evening.  
2nd.—Fine bright day, very cold wind; starlight evening.  
3rd.—Cool and cloudy, drizzle in early morning, bright sunshine at intervals; slight rain 10 P.M.  
4th.—Cool, cloudy, but fair.  
Another dry week, and considerably cooler.—G. J. SYMONS.

### COVENT GARDEN MARKET.—NOVEMBER 5.

LARGE supplies of American Apples still reach us, but samples are generally inferior though prices are good. Hothouse Grapes and Pines are in good demand, the absence of St. Michael's fruit causing the latter to be in great request.

### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	0	0	Melons.....	each	0	10	0
Apricots.....	dozen	0	0	0	Nectarines ..	dozen	0	0	0
Cherries.....	box	0	0	0	Oranges.....	100	4	0	0
Chestnuts.....	bushel	12	0	0	Peaches.....	dozen	2	0	0
Figs.....	dozen	1	6	0	Pears, kitchen..	dozen	0	0	0
Flauberts.....	1b.	0	4	0	dessert.....	dozen	2	0	0
Cobs.....	1b.	0	7	1	Pine Apples ..	1b.	5	0	0
Gooseberries...	1sieve	0	0	0	Plums.....	1sieve	3	0	0
Grapes, hothouse	1b.	1	6	0	Raspberries ..	1b.	0	0	0
Muscats.....	1b.	3	0	0	Walnuts.....	bushel	14	0	0
Lemons.....	100	8	0	0	ditto.....	100	0	0	0

### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	2	0	0	Mushrooms ..	pottle	1	0	0
Asparagus.....	bundle	0	0	0	Mustard & Cress	punnet	0	0	0
Beans, Kidney..	1sieve	2	6	0	Onions.....	bushel	2	6	0
Beet, Red.....	dozen	1	0	0	pickling.....	quart	0	4	0
Broccoli.....	dozen	0	9	1	Parley.....	doz. bunches	2	0	0
Brussels Sprouts	1sieve	0	0	0	Parsnips.....	dozen	0	0	0
Cabbage.....	dozen	1	0	0	Peas.....	quart	0	1	0
Carrots.....	bunch	0	4	0	Potatoes.....	bushel	3	6	0
Capsicums.....	100	1	6	0	Kidney.....	bushel	4	0	0
Cauliflowers...	dozen	3	0	0	Radishes... doz.	bunches	0	0	0
Celery.....	bundle	1	6	0	Rhubarb.....	bundle	0	0	0
Coleworts... doz.	bunches	2	0	0	Salsafy.....	bundle	0	9	1
Quenambers.....	each	0	4	1	Scorzonera.....	bundle	1	0	0
Endive.....	dozen	1	0	0	Seakale.....	basket	2	0	0
Renail.....	bunch	0	8	0	Shallots.....	1b.	0	3	0
Garlic.....	1b.	0	6	0	Spinach.....	bushel	2	6	0
Herbs.....	bunch	0	3	0	Turnips.....	bunch	0	6	0
Leeks.....	bunch	0	2	0	Vegetable Marrows	each	0	0	0

## WEEKLY CALENDAR.

Day of Month	Day of Week	NOVEMBER 13-19, 1879.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.							
13	TH	Brixton and Stoke Newington Chrysanthemum	49.9	33.2	43.6	7 16	4 12	6 42	8 19	29	15 38	317
14	F	[Shows.]	48.5	32.8	41.3	7 18	4 11	8 12	4 0	1	15 37	318
15	S	Sale of Bulbs by Mr. Stevens, Covent Garden.	49.0	34.8	41.9	7 20	4 10	9 33	4 55	1	15 17	319
16	SUN	23 SUNDAY AFTER TRINITY.	48.9	33.2	41.0	7 22	4 8	10 38	6 4	2	15 7	320
17	M	[Committee at 11 A.M.]	48.1	33.9	41.0	7 22	4 7	11 26	7 24	3	14 56	321
18	TU	Royal Horticultural Society—Fruit and Floral Com-	47.9	32.9	40.4	7 25	4 6	11 59	8 47	4	14 45	322
19	W	Chrysanthemum Show at the Royal Aquarium.	48.9	33.5	41.3	7 27	4 4	0 a 23	10 8	5	14 30	323

From observations taken near London during forty-three years, the average day temperature of the week is 48.7°; and its night temperature 33.9°.

## OVERCROPPING.

**S**MALL fruit, poor in colour, deficient in flavour, often failing to come to full maturity; barrenness, debility, premature decay. Such are some of the lamentable results of over-cropping Grape Vines and fruit trees—results so patent, evils so deplorable, but all of which might be avoided by the exercise of ordinary prudence and forbearance. We are all too prone to take things for granted. Inquiry into cause and effect is not half frequent or persistent enough, and yet it is manifest that without such inquiry our work and its results must inevitably be beset by a most unpleasant uncertainty.

When young fruit is thickly set upon a Peach tree no doubt it requires a certain amount of resolution to remove two-thirds of it; when a Grape Vine has a couple of shoots on the same spur, each with a young bunch of fruit extraordinary in size and promise, it seems a positive shame to cut off one of them, and yet in both cases neglecting to cut off and thin is running counter to the dictates of common sense and the stern teaching of experience. We may go further and assert that it is positive folly; so also is an overcrop of branches—crowded growth inducing disease, sterility, and under-sized fruit. Depend upon it enough space for a free admission of air and sunshine among branch, foliage, and fruit none of us can afford to despise.

To probe the evil more deeply, and by way of example, let us take the common case of a Peach tree in a state of exhaustion from overcropping, or rather half a dozen trees, for it does not affect every tree to the same extent. Some, though barkbound and weakly, may yet present an appearance of tolerable health, and display a tendency to grow and bear fruit; others have a sparse clothing of small foliage, but make no appreciable growth; others have sickly foliage and many dead branches, and are evidently hastening to premature decay. Now, at various times I have had to treat many such trees, and have invariably found them easily cured, if the branches are sound, by cutting away the entire head of the tree to within a couple of feet of its base, renovating and draining the border if necessary: thereby inducing a young growth of such vigour as to reach the top of an ordinary garden wall in three years, so that in four years it is again a full-sized tree in full bearing. Great as is the vitality of a Peach tree it is wrong to tax it so severely, and while showing the remedy for debility one must deplore and condemn the bad treatment that has caused it.

The nature of a Grape Vine is much more elastic. How an exhausted Vine may be brought into a robust and fertile condition in a year or two by a judicious use of the pruning knife among its branches and a fresh supply of rich soil for its roots has repeatedly been shown in these pages. Let me add a word of caution about Vines in pots, which now have such an important part in early forcing that a blunder proves costly in the truest sense of the word. Never attempt overcropping Vines in pots. From four to six good bunches should be the maximum number; if you

attempt to ripen more the fruit will certainly be under-sized, and most likely shanking will attack the bunches with more or less severity. I learnt this to my cost a good many years ago when trying to ripen from eight to twelve bunches on some very strong canes. "You will never do it," said an experienced old Grape-grower. "At any rate I'll try hard," said I. But despite all my efforts, shanking attacked them so badly that hardly any of the bunches were presentable. The lesson was a severe one, and withal most useful in carrying conviction to my mind that over-cropping was a cause of shanking, and might be expected to induce it also in Vines established in a border.—EDWARD LUCKHURST.

## ROSE CULTURE.

THE season is now at hand for transplanting Rose trees, and a few practical remarks may prove useful to amateurs and others. He who desires to form or extend a Rose garden must now make his arrangements for planting. In the case of forming a new rosery the first question is, Where shall we find the best situation? The Rose must have a free circulation of air; it must be both exposed and sheltered, and have both sunshine and shade. The centre of the rosery must be open and surrounded by a protecting screen, so arranged that a large proportion of the trees will have the benefit of the sun during the fore part of the day. This can be effected by extending the garden from north to south, thus making it of an oblong or semicircular form. The northern fence must be tall and dense; the western should be tall, but not necessarily so dense as the northern; the eastern such as will check cold cutting winds, but not one ray of sunshine; the southern end requires some slight screen, such as a low bank, to break off rough winds which occasionally blow from that quarter. The surrounding screen should be masses of evergreens, such as Rhododendrons, Hollies, Yews, Berberies, &c.

We will now speak about soil. Roses may be grown in almost any ordinary garden soil if they have such a position as I have endeavoured to describe. An inferior cultivator, whether his inferiority is caused by want of knowledge or want of industry, is always snarling at his soil. Should the ground selected for the rosery be a cold adhesive clay the first thing to do is to drain it well 4 feet deep, with a good fall. When water stagnates around the roots of plants they cannot receive the air and warmth which are alike essential to their health. Trench the ground and make it as porous and friable as possible. Burnt clay, lime, or vegetable matter will considerably alter its texture and improve its quality. We have found burnt clay to be the most advantageous. The application of burnt clay renders the soil less compact, less tenacious, and less retentive of moisture. On the other hand, a light porous loam can be improved by intermixing stronger and more tenacious soil after the ground is drained. Then comes the manure. Farmyard manure should be employed very liberally. The degree of decomposition to which farmyard manure should arrive before it can be deemed a profitable manure greatly depends on the nature or texture of the soil. Heavy clayey

soils may receive less decomposed manure than more pulverised soils would require.

Planting should be brought to a close by the end of November if possible. When planting, all tap roots should be removed and any roots of great length shortened. Roses are frequently planted much deeper than is necessary, in many cases to save the trouble of staking. They should be planted just deep enough to be firm in the soil. After planting cover the surface over with a stratum of manure, both as a protection and also to feed the roots. In the case of established plants the season when manure is applied is an important circumstance. For instance, in spring and summer the object is to produce an immediate effect; therefore the manure should be more completely decomposed than is otherwise necessary when laid on in the autumn. Liquid manure from the farmyard is very beneficial, but let the reader remember the true rule of application—viz., weak and often. We always give two applications of liquid manure during the winter—in December and January. Bones are largely used by some cultivators, and we have a very high admiration of the bone as a manure. Nevertheless bones are not the manure for Roses, and the same may be said of guano; its influence is quickly evident in size and brightness of foliage, but the flowers, so far as our experiments show, derive no advantage, and even on the leaf the effect is transitory. After careful experiments with various manures we have found nothing so effectual as farmyard manure, which is the best for the Rose's health and beauty.

We now commence shortening by one-fourth the longest shoots of our established plants, thus preventing the rough winds from loosening the hold which the trees have upon the soil. These cuttings are inserted in a sheltered place and protected by handglasses: most of them will be rooted by April, when they are potted and gradually hardened off, and planted out in May. March is the month of our final pruning, except Noisettes and Teas, which are left until April. As there are many who fail to grow the *Maréchal Niel* Rose well, I may here add for their interest that the old *Gloire de Dijon* is the best stock on which to bud it that I am acquainted with, and the *Banksian* Rose is a most genial stock for the *Maréchal*; and if any of my readers are the happy proprietors of the former under glass, by all means bud the latter upon it. As the *Maréchal* is not perfectly hardy it requires to be well protected at the roots by manure in the winter, and even the upper growths must be screened if the weather be very severe. In preference to drawing out a list of the best Roses (as lists of good Roses appear in our Journal frequently) I will endeavour to point out the properties that a perfect Rose must possess. First, beauty of form—petals abundant and of good substance, regularly and gracefully disposed within a circular symmetrical outline; secondly, beauty of colour—brilliancy, purity, and endurance.—JOHN LLOYD JONES.

### FRUIT TREES IN PERFORATED POTS.

In a notice of the nurseries at Sawbridgeworth published on pp. 433-4, vol. xxxvi., reference is made to Mr. T. F. Rivers' mode of growing Pear and Peach trees in perforated pots. The trees were then laden with blossom; they have since perfected their fruit, and the weight and value of the crops prove the real usefulness of the system of culture in question.

The principle on which this mode of culture is founded is that fruit trees produce two distinct phases of growth under ground as well as above it, the one being annual, the other permanent. Above ground the foliage is the annual portion of the trees; and corresponding to the growth of the leaves on the stems are masses of small fibres produced by the roots. These leaves and fibres are produced and perish contemporaneously—the one cannot exist without the other. They have done their work in the autumn of supporting the crop and increasing the size and number of the branches of the trees, hence decay. With the production of fresh leaves new fibrous roots are formed to maintain the health and vigour of the trees. These roots, being only wanted in summer, are by this system of culture removed in the autumn, and masses of new roots are encouraged and new feeding ground provided to supply them with sustenance so that it can be readily and profitably appropriated. All gardeners know the benefit of top-dressings—that is, adding fresh food to the surface of the pots in which fruit trees are grown; but no system of top-dressing can equal Mr. Rivers' latest mode of supporting the trees, at the same time saving a great amount of labour which must be expended in watering when the pots are exposed to the air.

Pear trees only about 3 feet high in 8 and 10-inch pots are some of them bearing from twelve to twenty-four fruits, far excelling in size and quality those produced by trees in the open. In fact few trees that could not be protected in the spring have produced any fruit at all, and most of what little there is, is cracked and nearly worthless. The pot trees are easily protected, either by being placed under glass, or laid down closely together and covered with mats during severe weather. This past, the pots are plunged in good soil, of which new roots issuing from the perforations take possession, deriving support for the swelling crop. Such trees by the sides of walks are both ornamental and useful, and are certainly not difficult to grow nor need more time expending on them than is requisite in growing *Chrysanthemums*.

But perhaps the advantages of the system are more strikingly exemplified by a number of Peach trees grown in a very light unheated span-roofed house. In this house is a central path and two side borders wide enough for two rows of trees in each. These trees in 10-inch pots have produced from three to five dozen Peaches each of the first quality. The fruit being gathered and the leaves changing, the roots issuing from the sides of the pots are of no further use, and were being cut off at the time of my visit a few days ago and the pots replunged in the borders, which were enriched with fresh soil and manure for their reception. No one seeing the pots lifted out of their summer quarters could fail being astonished at the dense mop-like masses of fibrous roots attached to them. The greater portion of these, like the leaves, being annual, were shrivelling, and the whole were cut off within about 2 inches of the pots. There were five times more feeding roots outside the pots than could possibly have been produced in them; and the trees told how well they had done their work—short, hard, healthy growths and prominent buds ready for producing full crops of fruit another year. It is impossible that any amount of top-dressing and liquid manure (the pots being exposed) could have produced such crops as have been gathered from these trees and left the trees in such splendid condition as they now are.

The mode of culture described is not an experiment merely: the system has been practised sufficiently long to prove its value. The result is that Mr. Rivers is satisfied that by no other means, not even by having trees planted out and trained on trellises, could the small house referred to have been made to yield so many Peaches; and further, had the house been trellised two trees would have filled it, yielding a feast of fruit, but necessarily a short one, whereas by the present system of having a number of trees and varieties a long succession of fruit is ensured. The perforations in the pots are about an inch in diameter, and the simplicity and success of the plan merit record.

A word on some other features of the nursery. The crop of Peaches and Nectarines generally has been a great one. Upwards of a thousand dozens of fruit have been sold, all grown under glass; some houses having a row of hot-water pipes round them—by far the preferable plan, and some being unheated. Trees of all kinds in pots—there are thousands of them—are being packed for transit; also Vines, of which the demand yet almost exceeds the supply, large as it is. Grown on hot-water pipes, the canes are hard as oak and strong. Trees in the nursery are beautiful in their bright autumnal tints—good proof that the wood is maturing well. Plums *Early Rivers* and *Prince Englebert* especially have produced fine crops, the plantation of the latter having yielded three hundred bushels. A new late Plum, *Grand Duke*, is likely to prove a grand acquisition. It is large in size, rich in quality, and hangs until November. The wood is like that of the *Diamond*, but the leaves are rather longer; it is an excellent grower and forms handsome pyramids. It is a seedling from *Autumn Compôte*. The new Pear *Dr. Hogg* is by far the richest Pear now in season, and there are other seedlings of great promise approaching the ripening stage.

The crop of Grapes on some of the Vines in the permanent house, a low plain structure, is extraordinary, yet the wood is ripening well. *Lady Downe's* is bearing unusually fine bunches and berries and nearly black. *Gros Colman* has noble berries, *Alicante* has a mass of fruit. *Madresfield Court* and *Dr. Hogg* very good. *Black Hamburgh* fine, mostly cut. But the finest in appearance of all the black Grapes is *Gros Maroc*; berries large, bluntly oval, and thickly covered with purplish black bloom. Some of the *Muscats* have shrank, and many Pears in the open have cracked. But I am now approaching perplexing and debatable subjects on which volumes have been

written to such little effect that it requires some temerity to write more; still, believing that the subjects are not wholly exhausted, I may venture to return to them another day.—J. W.

#### NOTES ON USEFUL STOVE-FLOWERING PLANTS.

**PANCRATIUM.**—Like the *Eucharis* these are bulbous plants, comprising many species and varieties of great beauty, and are natives of the East and West Indies. They require a rather high temperature, moist and shady position, to grow them well, say a stove heat of 70° in summer and 60° in winter should be the minimum. They can be flowered twice a year, at least a few of the species, such as *P. fragrans*, *P. zeylanicum*, and *P. rotatum*; but if large specimens are to be obtained in as short a time as possible they should only be allowed to flower once a year, and that at their natural period, which is July or August. Young plants should be pushed on by repeated shifting as soon as they fill their pots with roots. When the specimens are as large as required they should only receive a shift every four years. Our largest specimens are in 18-inch pots; in these they were placed five years ago, and last July each threw up eleven scapes, with from eight to ten flowers on each. The soil used is two parts fibry loam, one part charcoal, and one part silver sand and sheep droppings. The loam is broken into pieces about the size of pigeon's eggs, the charcoal the same; when all has been turned two or three times it should then be run through a half-inch riddle, and what remains in the riddle put in the pots. In potting, the soil should be rammed very firmly. In the stove they should be close to the glass where there is plenty of light, but shaded from the direct rays of the sun, and they should receive a bountiful supply of water in the summer time, both from the watering-can and syringe. Even during the winter the syringe must be more freely employed than for most stove plants, particularly so if the stove in which they are placed is not furnished with vapour appliances. They are benefited by being turned into a cool conservatory when in flower, and supplied with a little stimulant; it prolongs their flowering season, and also imparts a much finer waxy appearance to the flowers—moreover, they last much longer in a cut state when subjected to this treatment previous.

**URCEOLINA AUREA PENDULA.**—This is a plant both useful and beautiful, but not generally met with. It produces its flowers on scapes, from the top of which they hang in a very graceful manner, so that each can be removed as it opens to be used for bouquets or glasses in rooms, so that each scape produces a supply of newly opened flowers for a considerable time. The colour is also an uncommon one, being a mixture of green and yellow; it contrasts with most colours, and the flowers last well when cut. As plants in pots they are highly decorative for rooms or halls. They are a little shy to cultivate. We have seen them kept in a greenhouse all the year round with considerable success, but we keep ours in the stove in company with the *Pancretiums* and *Eucharises*. Diminish the supply of water to a greater extent than for most stove-flowering bulbs; in fact, I have found *Aurea* to flower better when completely dried off like *Amaryllises*. The soil used for potting them should be lumpy, say one half fibry turf, and the other half charcoal, sheep droppings or cow manure, and plenty of sand, and potted very firmly in well-drained pots. They like plenty of light, but no direct sunshine. Their time of flowering depends on their treatment. They are flowering here at present, and have been for nearly a month back, a time when other flowers are not plentiful, which makes them more useful and appreciated.—H. ELLIOTT, *New Heys*.

**GRAPES WITHOUT FIRE HEAT.**—In a former situation we had a vinery containing the following varieties, which were all started into growth, and the fruit ripened without the aid of fire heat:—Muscat of Alexandria, Mrs. Pince, Golden Champion, and Gros Colman, the bunches being large, and the berries very fine, especially the two latter varieties. The berries of Gros Colman were very large, but coloured rather badly, and were rather given to shanking. All the others coloured well, and the berries were everything that could be desired. I do not say they would have coloured and ripened without fire heat in a season like the present, which has been most disastrous for gardeners; but in an ordinary season I firmly believe Grapes can with good management be started into growth, and ripened too, without the aid of fire heat, as I have proved by experience. By keeping the house close, and

only admitting air on very favourable occasions at starting, anyone may grow good Grapes without the aid of fires.—F. H. FROUD.

#### THE ROSE ELECTION.

I AM obliged to think that Mr. Ellwanger has, in his reply to my query as to the garden varieties, purposely omitted Tea Roses. This is the more strange, as it will be in the recollection of your readers that the Tea element in the newer varieties was greatly in excess of the same character in the English list; but, as in the case of the voters here, I did not feel justified in suggesting that there was a misunderstanding. Mr. Ellwanger has prefaced his list by suggestions in a paper entitled "The Best Hardy Roses for General Cultivation and How to Grow Them" as to site, treatment, pruning, &c. In treating of the qualifications for a perfect Rose he remarks that for "general cultivation they should excel in the following particulars and in the order named—First, beauty of colour, as that which first attracts us to the Rose; secondly, form; thirdly, fragrance; fourthly, profusion and continuity of bloom; and lastly, vigour and healthfulness of growth." I am not so certain that all of us would agree to the order of merit here. Mr. Ellwanger then gives the highest possible marks to be attained for these points—viz., 24, 22, 20, 18, 16; total, 100. Every one is perfectly justified in having their own ideas as to the value of certain points, which lead us to form opinions as to relative merits in different specimens, and in differing from Mr. Ellwanger I do not wish to place my ideas against his; but had I to place his five characteristics I should place them thus for garden varieties—Firstly, colour; secondly, profusion and continuity of bloom, and as a sort of rider to these two points I should add variety of bloom. This is a characteristic which it seems to me has been somewhat overlooked in the garden election. Then I am disposed to place his fifth point third, for it is in a garden variety a characteristic of marked importance. Fourthly, form would take my affection; and last to myself would be his third—fragrance. In the paper alluded to Mr. Ellwanger mentions that "a list of this kind would not be complete without mention of some summer Roses. Though blossoming only once a year, some of them, notably the *Mosses*, are so beautiful as to be essential to a Rose garden of any size or pretension." The list of the thirty varieties is then given, with the number of the points given for each of the five qualities noted above. Thus, Alfred Colomb heads the list, being marked the highest possible for colour and form—viz., 24 and 22; fragrance, 19; blooming qualities, 15; vigour, 13; or a total of ninety-two marks out of a possible hundred. After the table comes a short notice of each of the Roses, and I am struck by the note to *La France*—"the sweetest of all Roses; if compelled to choose one variety this should be ours." Here certainly it would appear to be preferred to *Gloire de Dijon*. I now place the two lists side by side, premising that Mr. Ellwanger's list is in order of merit tested by the points allotted to the several characteristics named.

##### Election List.

1. *La France*
2. *Gloire de Dijon*
3. John Hopper
4. Duke of Edinburgh
5. Jules Margottin
6. Souvenir de la Malmaison
7. Baronne de Rothschild
8. Cheshunt Hybrid
9. Général Jacqueminot
10. Dupuy Jamain
11. Sénateur Vaisse
12. Alfred Colomb
13. Marquise de Castellane
14. Madame Victor Verdier
15. Marie Baumann
16. Charles Lefebvre
17. Boule de Neige
18. Ferdinand de Lesseps
19. Prince Camille de Rohan
20. Fisher Holmes
21. Marie Finger
22. Céline Forestier
23. Beauty of Waltham
24. Marie Van Houtte
25. Abel Grand
26. Maréchal Niel
27. Anna Alexieff
28. Marie Raby
29. Dr. Andry
30. Souvenir d'un Ami

##### Mr. Ellwanger's List.

1. Alfred Colomb
2. Mar e Baumann
3. John Hopper
4. Madame Victor Verdier
5. Général Jacqueminot
6. Comtesse C. de Chabillant
7. François Michelon
8. *La France*
9. Charles Lefebvre
10. Marguerite de St. Amand
11. Louis Van Houtte
12. Jules Margottin (Climbing)
13. Anna de Diesbach
14. Paul Neyron
15. Baron Prevost
16. Marie Raby
17. Madame Boll
18. Caroline de Sansal
19. Baronne de Rothschild
20. Marquise de Castellane
21. Coquette des Blanchés, H.N.
22. Coquette des Alpes, H.N.
23. Blanchefleur, Provence
24. Eugène Verdier
25. General Washington
26. Prolific Moss
27. Cheshunt Hybrid
28. Cristate, Moss
29. Appolline, B.
30. Hermosa, B.

These two lists are interesting as comparisons; doubtless the variations of soil and climate have a marked influence on the

selections. Some Roses in Mr. Ellwanger's list I have never been able to induce to open respectably, notably General Washington. It is somewhat singular that John Hopper occupies the third place in each list, whilst the Hybrid Perpetuals Duke of Edinburgh and Dupuy-Jamain do not get into the thirty in Mr. Ellwanger's list, although both holding forward positions in the election list; and the same remark applies to the charming autumn bloomer Souvenir de la Malmaison.

Thanking all who have assisted, and trusting the coming winter will deal kindly with our Roses, I conclude the elections of this year.—JOSEPH HINTON, *Warminster*.

### VERY LATE PLUMS.

WHEN the writer entered business nearly twenty-five years ago the only representatives of late Plums in general cultivation were Oee's Late Red and the Impératrice. In no branch of horticulture have more rapid strides been made than with the Plums. Our great fruitist Thomas Rivers, by raising the Early Prolific, started the season for Plums in the end of July (20th to 27th here), and on the 1st of November I gathered fruit of four really fine varieties of late Plums—viz., Wyedale, a dark red of middle size, oval shape, which is one of the most delicious cooking Plums; very hardy growth. Lafayette, a luscious Gage-like Plum of a sweet and pleasant flavour; good grower and bearer. Belle de Septembre, a fine bright red Plum; a strong grower, and likely to bear well when the trees are old. The acid flavour of this is like the Diamond, and though not so rich as the others will be useful in tarts, &c. Finally, as Rivers' Prolific opened the season, so that recent acquisition Rivers' Grand Duke fitly closes it. This is a coming Plum; it is of a blue Gage appearance, large, very sweet, and richly flavoured. All these late Plums are suitable for dessert except Wyedale, and, to use a very forcible expression, do not "taste of the tree," as many late fruits do, but really partake more of the nature of a sweetmeat.

For my own part I really wonder people take the trouble to raise and bring out good new varieties of fruits, because it is so difficult for growers to induce planters to adopt them. One would almost think that an Orleans, a Green Gage, a Magnum Bonum and an Egg Plum were the only varieties worth growing; and my object in writing these few lines is to induce planters to try these valuable additions to the series of Plums both on walls and in the open—one of our most useful fruits—and all the varieties named are later than Damsons.—GEORGE BUNYARD, *Mardstone*.

### THE NORTH ASPECTS OF WALLS.

NORTH aspects are generally considered nearly useless so far as fruit trees are concerned. We generally find them very indifferently covered, as if the trees were not worthy of attention. This season and for several years we have gathered our finest and most abundant crop of Morello Cherries from a north wall. Some of our largest Pears this season are on a similar aspect. Lord Suffield Apple seldom fails to bear a good crop on this aspect. Gooseberries succeed capitally, also Red and White Currants. We have some fruit of the latter hanging now (October 29th) as fresh as in July, and we have no doubt with a little extra attention we could gather good Currants to the middle of November.

Taking these facts into consideration I would certainly advise all who have hitherto neglected their north walls to plant some trees this winter and give it a fair trial. In most cases the sun does not shine much on north walls, consequently the soil at the base of them is always inclined to be damp, and this combined with a naturally wet soil or subsoil is the reverse of favourable for the growth of fruit trees. This can generally, however, easily be rectified by placing a good quantity of drainage under the trees and raising the border well above the level of the surrounding ground.

If the trees are to be planted against a north aspect it would take much time to renew all the borders, and instead of doing so take out the soil in several places, forming holes 6 feet wide, 6 feet long, and 3 feet deep. In the bottom of these holes place to the depth of 20 inches rough stones, ashes, or anything that will act as drainage. On this a foot depth of soil may be placed; plant the trees above this and cover the roots over with more soil, leaving the mound when planted about 2 feet above the rest of the border. When Gooseberries or Currants are to be planted less preparation will be necessary, but a little labour spent in this way at first is generally the

cheapest plan in the end. Standard Gooseberries, Currants, and Raspberries also succeed in a north border, and when the wall is well covered with Cherries, &c., and the border stocked with such bushes it is both profitable and pleasing.—A KITCHEN GARDENER.

### FRENCH NOTES.—No. 4.

#### PARIS.

I DO not know a more pleasant month to be in Paris than September. The days are generally fine, the temperature not too high, the parks and gardens are in their beauty, the trees on the boulevards have not shed their leaves, and the outdoor life, so dear to the Parisians, is in its full swing. There is one drawback—Paris is not there: it is not the season. The upper ten are in villaguetage, either displaying themselves in fancy costumes at Trouville or some other watering place, or else at their châteaux, and so the dashing equipages which make the Champs Elysées and the Bois so gay by day and brilliant at night are wanting. But with this exception there is no month I would rather advise those who have not visited Paris to go there than September. True, this year it was not in its usual condition. This year, which has been so disastrous to us in England, has been nearly as much so in France, and in nothing was this more conspicuous than in the appearance of the fruit department in the Halles Centrales. There were Grapes there, it is true, from the south; but the heaps of luscious Figs, the beautiful collection of Pears, and the highly coloured Peaches of Montreuil were but poorly represented, and were also very dear. The Peaches were certainly very inferior in quality to those I have tasted before, and evidenced want of sun both in colour and flavour, while the more common fruits had taken the place of the more refined kinds. There were large quantities of Belle de Septembre Plum and some other coarse-looking kinds. There were at Chevet in the Palais Royal, and Potet and Chabot in the Boulevard des Italiennes, some finer specimens of fruit, but no way to be compared to such a show as one sees at Solomon's or Garcia's in our own Covent Garden. In truth it is no insular prejudice that leads me to say that nowhere in the world, perhaps, are such splendid fruits to be seen as are produced by our vineries, Pine pits, and Peach houses. Greater profusion of course there is, and in some one place greater superiority in one kind, but take it all round we may well challenge the world to beat us. Vegetables were as usual very good. The wet season, too, had not the same effect upon them as on the fruit. There are some which we rarely see amongst us, such as the Aubergine and the Sweet Fennel, the latter very much used by the Italians and said to be very palatable.

The season—which has so damaged the hopes of lovers of the bedding-out system, when leaves have been abundant and flowers scarce, when Alternantheras have perished and Coleuses been dingy—had told with nearly as much effect on the various parks and promenades of Paris; and although the verdure was perhaps more refreshing than ever, yet the brilliancy of the flowering plants was considerably dimmed; nor did I notice anything particularly novel amongst the designs of the beds or the plants employed to fill them. A new park has been opened near the terminus of the Sceaux railway—the Parc du Mont Souris. It differs from any of the others that I have seen in Paris in that no flowers are employed in its ornamentation. The effect is made to depend on the skilful grouping of Conifers. It is on a very elevated spot, and on the highest ground is a Tunisian-looking building, which is in connection with the observatory in Paris. In what may be called the private grounds attached to this there are some flower beds, but all the rest of the park is without them. There are some skilfully executed pieces of rockwork and a large piece of water, and although two railways run through the Parc it is so skilfully managed that it is very little of a disfigurement. The cold Parisian winter does not allow the choicer Conifers to be used, so that the groups are composed simply of the hardier kinds; but in the course of a few years I do not doubt that this Parc will prove a very attractive addition to the public places of Paris. Right away at exactly the opposite end of the city a new park, or garden, is being formed from the summit of the Trocadéro down the slope where the long flight of steps used to be to the Seine. So far as I could judge them (for it was in a very rough state) there was a deficiency of the usual taste displayed in these matters. Large pieces of statuary partly gilt are surely out of place in these days when the superiority of plants has been so univer-



sally recognised. The building of the Trocadéro itself is especially ugly, but the view from it of the city is very exquisite. There is also an aquarium in course of formation which promises to be in good taste. Probably on our next visit the whole thing will be complete, and the general effect can be better estimated.

The Parc de Monceaux is, I think, the most finished piece of gardening in Paris. The Parc itself has an aristocratic air about it, while the greatest care is taken in producing by the aid of choice exotics, well-arranged beds, and what is now called carpet or leaf bedding, the happiest effects. One of the most pleasing combinations is a large bed of the variegated *Acer Negundo*, amongst which some late *Phloxes* of a lilac shade had been largely planted: these gave a most pleasing effect, reminding one, as one is often reminded by things in nature of some production in art, of those delicate shot silks which at one time used to be so much the fashion. Another very effective bed was one of scarlet *Hibiscuses* with an edging of white *Lantanas*. Some specimens of *Aloes* surrounded by blue *Lobelias* looked uncommonly well, as did a large bed of *Erythrinas*, amongst which was a tall-growing plant with long spikes of small white flowers, the name of which I could not find out, but which looked not unlike a *Francoa*. It was not to be expected that the subtropical plants, such as *Ricinus*, *Wigandias*, &c., should be at all equal to what they usually are, for they delight in a hot warm summer.

The Luxembourg gardens still maintain the character they have always held as something distinct. There is more permanent gardening here than in any of the other gardens. *Roses*, *Althæas*, bushes of *Honeysuckle*, *Pæonies*, &c., occupy permanently the centre of the beds, and then the spaces are filled in with herbaceous and bedding plants. This gives greater variety, but I very much question whether for a public garden it is so effective as that pursued in other parks; but there is much more of stiffness in the whole of the surroundings of the Luxembourg which makes this style of gardening more suitable. The season was not without its effects here also, and that completeness of effect which is generally so characteristic of the gardening in Paris was absent.

The Boulevards were as usual very effective—unique in their peculiar style of beauty; but in walking along them I was struck with the different aspect of various portions according to the trees used. These are the *Ailantus*, *Plane*, and *Horse Chestnut*. All along the Boulevard des Capucines, Boulevard des Italiennes, Boulevard Poissonnière, where the two former had been used, there was the appearance of summer with their fresh verdure and grateful shade; but along the Boulevard de St. Martin up to the Place Château d'Eau, where the *Horse Chestnut* was used, the leaves had fallen and gave quite a wintry appearance. It is almost a pity that the same trees were not used the whole length. Of course in early spring the *Horse Chestnut* would have the advantage; but, after all, the *Plane* is the tree for planting in towns, and it must be a matter of congratulation that it has been so used on our Thames Embankment, which, notwithstanding its many drawbacks, bids fair to be the finest riverside drive in Europe.

And so end my French notes for 1879, made during a very brief visit, but full of quiet enjoyment and pleasure.—D. Deal.

#### EVERGREEN CLIMBERS—COTONEASTER SIMMONDSII.

SIDNEY SMITH once laughingly said of an acquaintance that he had been heard to "speak disrespectfully of the equator." Now, I think "GLOUCESTERSHIRE PARSON" (page 342) speaks disrespectfully of the *Cotoneaster*. *C. microphylla* is all he says of it; but does he not know *C. Simmondsii*? The leaf is a beautiful shade of green, very glossy, and the scarlet berries are very numerous; they are large oblong berries of a brilliant scarlet colour, and all last winter made "a sunshine in a shady place," till they were picked off by the starving birds. This plant is trained round and over a Wyatt window, facing almost due north. It is kept closely spurred in, and is one of the best evergreen climbers of its kind. It is not a graceful plant. It is stiff and conventional, or, as a friend one day scoffingly remarked, "very high art;" but it is invaluable for covering a wall with a north aspect, as it is very hardy and grows quickly.—BUSY.

POT VINES—PEARSON'S GOLDEN QUEEN.—I am quite with Mr. Iggulden on the desirability of growing this as a pot Grape. In 1878 I fruited six canes, and exhibited three bunches at

the York Gala, the colour being perfect but the bunches not over large, and to my surprise the judges put me in the second place, Madresfield Court in front. Was this right? I would say to all pot Vine growers if they have not tried *Gros Colman* as a pot Grape to do so. Graft it on good *Hamburg* stocks in February, then grow it on easily. These are Grapes "to see once and dream of for ever."—R. GUNGER.

#### BOUVARDIAS.

Now that we are passing through the dullest portion of the year we look principally to our greenhouses to furnish us with floral beauty, and it is to our own interest to observe those plants which are the easiest to obtain, and which at the same time give us a fair result for the trouble bestowed upon them. *Bouvardias* stand in the first rank of merit as decorative plants at this season of the year, and there is no reason why we should not have them in flower from this time until the end of March, provided we have a good succession of plants to depend upon. In the *Bouvardia* we have elegance of flower—form, rich and valuable colours, frequently with delicious perfume. Her bouquet work of every description they are well adapted; in fact, where flowers are in great demand for cutting purposes they are invaluable.

*Propagation*.—Start the stock plants early in the new year, so as to secure as early a batch of cuttings as possible. They will strike in a good bottom heat in a few days, the pots employed being well drained; in fact, half filled with potshards, and the soil should be composed of equal parts of good mature fibrous loam, finely sieved, well-decayed leaf soil, and sharp sand. After the cuttings are well rooted pot them off in small 60-size pots, and encourage growth by keeping them in a close house with a temperature of 65° on 70°, with plenty of moisture both in the atmosphere and at the root. Stop them at every joint they make, which will give them a free-branched and dwarf appearance. There can be no greater mistake made in the cultivation of these plants than to allow them in a young state to make long shoots; but they should be well stopped until they have made eight or ten or even twelve young shoots, by which time the small pots will be well filled with roots, when larger pots will be required.

The size of pot depends entirely on the requirements. For general purposes 48-pots are the most serviceable. Employ in the second potting a soil composed of good mature loam, leaf soil, well-decayed cow manure, with some gritty sand, well draining the pots, and potting the plants moderately firm. Place them again in a close house with plenty of moisture and a cool bottom for the pots to stand upon, as a dry bottom is not so good. By the middle of June they may be removed to a cold pit, keeping them close and well shaded from direct sunshine at first, and always more or less shaded, never allowing them to want water, but give them it in abundance throughout the season, and stop them until the end of August, as the flower clusters have then a good time to form, allowing them a good supply of air at all times. When the pots are well filled with roots water them every week with good liquid manure, which improves them greatly. They may remain in ordinary seasons in a cold frame until the middle or end of September, when they will be removed into the house, but do not greatly increase the temperature unless they are required to flower early. To give them a neat appearance they require staking. After the first flowering they may be cut well back and pushed on in heat, and they will readily and soon produce a second batch of flowers.

The following are the best and most useful species and varieties for all purposes:—*Vreelandii*, one of the best whites, very floriferous, good clusters of flowers, and most valuable for bottom-holes, &c. *Elegans*, the counterpart of the last; good grower, free flowering, flower clusters fair size, well set with rich scarlet flowers of great substance. *Hogarth*, a beautiful hybrid, similar in habit to *Vreelandii*, producing good cymes of bright scarlet flowers; a very neat and good variety. *Jacminiflora*, very free, producing lax cymes of pure white long-tubed flowers, deliciously scented; one of the best, but very liable to insect pests: look after them. *Maiden's Blush*, similar in growth and flowering to the first, but a lovely blush colour, which renders it distinct and charming. *Leiantha*, a good very small-growing variety extensively grown for market purposes, producing bright red flowers. *Delicata*, flowers very light rose, freely produced. *Van Houttei*, a very fine scarlet-flowered variety of small growth. *Humboldtii corymbiflora*, this is perhaps the finest of all *Bouvardias*, producing large

corymbs of pure white large flowers, very strongly and sweetly scented. Some regard this as a shy bloomer, but when well handled it is free enough, and every flower produced rewards the cultivator. Longiflora is also a splendid variety, producing long-tubed white flowers of great substance. Candidissima is of all perhaps the easiest (if we may use the term) to manage. It grows very freely and flowers as freely, and the latter are very rich and desirable. There are a few others well worth growing.—T.

#### FLOWER GARDENING MADE EASY AND BEDDING MADE PRODUCTIVE.

BAD seasons, bad harvests, and but little rent make a gardener's situation on large landed estates anything but pleasant; still I fully believe there are some beneficial results. It tends to awaken us to use economy; and if there is any scheming or generalship among gardeners these are the times to bring it out. I have here under my charge a very large flower garden, and one particular site in it is a long border skirting the lake, which required from five to six thousand Geraniums to fill it. This season I was instructed not to bed this site out at all unless I could make it both ornamental and at the same time profitable. Not liking the idea of a bare border all the summer I ordered 3 lbs. of Beet seed, known as the Pine Apple, drilling it in rows at 1 foot apart. The seedlings came up well, were duly thinned and kept clean. A yellow Viola was planted round the edges of the bed. Just now when all other beds are bare this border is simply beautiful, and will last until affected by frost. I calculate the Beet will be worth 1s. per dozen, and at that price I shall realise, if only one-half is marketable, the respectable sum of £6 sterling. In conclusion I may say practice makes perfect. If I had dotted in a few clumps along the centres of the beds of Ribbon Grass it would have been a great improvement; however, next season I will, if spared, introduce the grass above mentioned.—KITCHENER.

#### WATER PLANTS.

FEW things are uglier than a muddy horsepool by the roadside, especially when it is fringed with slime in which the loose feathers of the ducks which make the pond their playground are sprinkled about so as to make even the dirt look dirtier. There are many such ponds in my parish, but one has a glory all its own in a stately plant of the great Water Plantain (*Alisma Plantago*). This plant happens to grow just in the centre of the pond, and the strong upward growth of its beautiful leaves contrasted with the light feathery sprays of the flower, and the broad shadow of the whole reflected in the water, are so extremely beautiful that they redeem even the muddy horsepond from ugliness. Most of the endogenous plants have something stately in their appearance, and they seem to have a peculiar liking for water. The *Alisma* is not the only wild flower which adds grace and even dignity to our roadside pools. In many places the Bullrush is abundant, and other tall Sedges and Grasses, combined with the broader leaves of the wild Iris, make a beautiful border to some shadowy piece of water lying low under the shade of a dark wood.

Another beautiful wild endogen is the Flowering Rush (*Butomus umbellatus*), which is comparatively rare, but may be found occasionally growing in stagnant water. It grows in this country, but is not easily found. All these wild plants are suitable for the garden if there happens to be a pond large enough for their stately growth. They are fortunate who possess such a pond or natural water in any form in their gardens, for in out-of-door work nothing is more interesting than the cultivation of aquatics and damp-loving plants. The cultivation of *Richardia aethiopica* (*nee Arum*) seems to increase year by year as the beauty of its leaves and flowers becomes more and more appreciated; but we usually see it in large pots, where no doubt it attains a greater size than under any other treatment. But in Cornwall it is frequently planted in large ponds, and in such cases it flourishes fairly well, dying down every winter and reappearing with the spring. It looks particularly well growing actually in water, and I have been pleased with the effect of it in my own garden, simply plunged pot and all in an artificial pool. Under these circumstances a network of roots quickly forms on the surface of the pot, and the plant will thrive well during the summer months.

I must confess to a failure with *Aponogeton distachyon*. It

grows abundantly in the pond of a garden belonging to a friend in South Devon, and the flowers there are most useful for gathering in winter, as they are curious and sweet-scented. I have had plants from that pond given to me, but without success. The pond in which it thrives so well has a gentle stream passing through it, and I attribute the great luxuriance of the *Aponogeton* to the fact of the water being at once still and yet changed. I have seen this aquatic grown at Kew in a bellglass turned upside down. It was very different from the same plant in South Devon, but yet it was an interesting plant, and I think I shall make another attempt to grow it in that fashion. It seems to me to have a great objection to artificial heat, as I have tried it my vinery, where it soon disappeared, and I have known it share the same fate under similar circumstances in another garden. It is one of those provoking plants which when once they take to a place grow like weeds, but the difficulty is to get them to take.

The Water Lilies are perhaps the most beautiful of all aquatics, and yet they are so troublesome in their cuckoo-like determination to oust other things from their nest and to get possession of the whole for themselves, that it is necessary to be careful in introducing them, unless the ornamental water is sufficiently extensive to give them plenty of room. On the banks of such a piece of water, be it large or small, the first things to plant would be *Arundo conspicua* and the *Pampas*. I have seen lately the assertion that the former is as hardy as the latter. I hope it may be so, but my own experience is, that in the bitter cold of last winter the *Pampas* survived, though somewhat injured; the *Arundo* died. However, my plant of the latter was small, the *Pampas* was well established; this last has now quite recovered from the severe winter, and is throwing up as many heads as usual, though more than a month behind the usual time.

I believe nothing could be more beautiful on the banks of artificial water than great cushions of moss and such wild flowers as like a moist dripping atmosphere, if they could only be made to grow as they do in the far west. Anyone who has seen that perfect gem, the Ivy-leaved *Campanula* (*Campanula hederacea*) growing in its native haunts with the lovely Bog Pimpernel (*Anagallis tenella*) cushioned also by its side, would agree with me that scarcely anything more beautiful can be seen in our gardens. The light green of the Cornish Moneywort (*Sibthorpia europaea*) is often found in great abundance close at hand, and adds another beauty to the soft loveliness of those rich dewy banks of moss, Ferns, and flowers which are to be found in the deep wooded valleys of Cornwall and Devon. I am afraid it is scarcely possible to reproduce them artificially, and perhaps some would say it would not be right to attempt it. But comparatively few penetrate the recesses of a Cornish wood except on the day of a grand battue, and therefore the exquisite beauties of Nature to be found there are almost unseen. It would at least extend the area of such delights if we could reproduce them in our garden, although we who know them at home might not perhaps care much to meet with them when they would inevitably bear some signs of not being quite happy.

I was crossing the Southampton Water by the steamboat to Hythe last week, and we met men loaded with Ferns. "Ah," said my friend, who lives in the Forest, "we shall soon lose all our Ferns in that way." If the Swiss have found it necessary to pass a law to protect the Edelweiss, we may have to protect our plants at home, as we do already protect our birds, sooner than some of us imagine. As yet, however, though the Cornish cliffs have been denuded of the beautiful *Asplenium marinum*, and though I see the *Sibthorpia* offered for sale, I have little fear for the destruction of the *Anagallis*.—A GLOUCESTERSHIRE PARSON.

#### ROSES—PROTECTION.

MR. BARDNEY gave good advice on this subject. I last spring planted ten weak plants of Céline Forestier, and muffled them up as advised by Mr. Bardney. They have done capitally, both as regards growth and efflorescence. In passing I may observe that Gloire de Dijon, Céline Forestier, and Triomphe de Rennes are three of the most gratifying Roses. They are here good on all stocks, in all situations, and throughout the season. It is impossible to praise them too much. I have muffled up this day (November 5th) four hundred Roses, and have 2100 more to protect. I believe that from the saturated state of the soil if frosts are severe sad will be the effects on vegetation. The late Mr. Rivers told me years ago

that 5° of frost would kill Roses. Muffling up is not only a great protection, but it causes drainage. I advise persons with wet ground to put down deeply an iron bar on three sides of the plant to cause artificial drainage. The Manetti stock is an admirable stock for dry ground, but it does not like lying in continual wet without adequate evaporation. Roses bought by the hundred and paid for with ready money are so cheap that it is not worth trying to recover cripples.

I quite agree here with Mr. Baker—"Hercules." Formerly Mr. Hedge was Hercules, and I greatly regret his retiring from exhibitions. During the several years that I helped to adjudicate the Roses at Kensington none ever gave me greater pleasure than Mr. Hedge's Roses. They were not divisible into good, bad, and indifferent, the usual character of exhibition Roses, but were universally masterpieces. The rules laid down for adjudicating Roses are good, but too cumbersome for large exhibitions. They would require double the number of censors or more.—W. F. RADCLIFFE.

#### NOTES ON THE LATE FRUIT SHOW AT HEREFORD.

It is a pardonable subject of congratulation in the case of so small a county as Hereford that as they held during the summer beyond all comparison the finest exhibition of Roses both in point of size and quality, so there was collected in their ancient city last week, in the words of your admirable and complete report, "by far the greatest exhibition of Apples and Pears of the year."

Never, surely, were a Committee in this age of surprises so agreeably surprised at the result of their labours. Gloucestershire had given up their ancient fruit exhibition as this year hopeless. Many there were to counsel us to go and do likewise. Some, in grim irony, allowed the cracks in the fruit would be most useful to stick labels in.

The Exhibition has, however, taken place, and successfully; and, thanks to the presence of our chief Esculapius at the helm and our prince of pomologists at the prow, proved not only beneficial to those immediately concerned in the undertaking, but, I would believe, to fruit culture generally.

Among the many questions that were discussed by Apple and Pear growers present, the two following are of interest:—Whether dessert Pears, such as Beurré Diel and General Tottleben, should be entered also as stewing or culinary varieties; also, as to whether Apples so closely synonymous with each other as King of the Pippins, Stoke Pippin, Seek no Further, and Golden Winter Pearmain should be classed as separate varieties, or merely synonyms of Golden Winter Pearmain. While I quite agree with Mr. Killick—to whom we are under, let me add, the most pleasing obligations for his valuable contributions and hearty help—that Warner's King was the Apple of the Show, I hardly think he would give the pride of place to this variety where other Apples are exhibited in a like degree of excellence. I should like him to have seen the Blenheim Pippin as it was shown last year at Gloucester, and where it carried off every first prize, and deservedly so. This year this grand variety shows small and bad everywhere.

I should also like to endorse the opinion of your reporter, which I also see shared by Mr. Killick in his notes on our Show, that with the exception of the Holme Lacy fruit plantation and a few others, quite as the exception not the rule, the skilled attention so apparent in Kent is lacking with us, and gives the right clue to our Herefordshire orchards not taking up the front rank, to which their rich warm soil undoubtedly entitles them. Everybody knows the climate of Herefordshire is humid, and especially is this failing noticeable in a wet sunless season like the present, when it has been especially trying to vegetation and maturation. But still, as Mr. Killick points out, with such fine undulations to select from (and in America I am told such situations are considered by their owners as absolutely necessary if they would avoid the ill effects of early frosts, mildew, &c.), I feel sure that in flavour, colour, and size the orchards of Herefordshire ought to rival if not surpass those of Kent or any other county in England. Such was the verdict of old pomologists of the end of the seventeenth century; but alas! the situation and cultivation of most of the orchards of our boasted highly civilised nineteenth century is of so scandalous and neglected a character, that one would never be surprised to see the ghost of the classic Evelyn rising up and mournfully accusing so great a waste of Nature's wealth and their own opportunities. Allow me to take this opportunity, as Chairman of the Committee of the Hereford-

shire Pomona, to thank our kind friends both at home and abroad, who so unselfishly came to our help, for the pecuniary inducement was almost nil, and made us almost forget, in their own geniality and in the rich abundance of their contributions, the dreary unproductiveness of the season.—THE HEREFORDSHIRE INCUMBENT.

#### SHEFFIELD GARDENS AND GARDENERS.—No. 5.

EXAMPLES of shrub, fruit, and general plant culture having been noticed, Orchids as grown in the district merit attention. The finest collection of these plants to be seen in or near Sheffield is at

##### WESTBROOK.

Westbrook is the residence of Henry Wilson, Esq., who is a great manufacturer of snuff and a great patron of Orchids. The snuff mill is near to the residence, the small garden attached to which contains several good houses filled with an extensive assortment of admirably grown plants. The whole place is redolent of snuff; and whether it is to this fact that the extreme cleanliness of the plants and their freedom from insects is attributable I know not, but this I know that it would be difficult to find Orchids in better condition than Mr. Wilson's are, as grown by his experienced gardener and skilled cultivator Mr. Clements.

Many of the plants that once formed the celebrated Meadow Bank collection are here, and others have been obtained from various sources until the stock has become of great value, having, indeed, recently been appraised at between £3000 and £4000. In the East Indian house are many fine Vandas, *Aërides*, &c. *V. tricolor formosa* is a splendid specimen, remarkable for its rich dark green foliage; and equally striking is the Chatsworth variety of *V. snavis*, and a notable plant of *V. Westbrooki*; *Aërides virens* Dayanum is very fine, and *Angræcum sesquipedale* is a fine broad-leaved specimen; *Phalænopsis*—*amabilis*, *grandiflora*, *Schilleriana*, and *Lidde-manniana*—are numerous, and, though not large, are in superb condition. Suspended from the roof are examples of *Dendrobium Wardianum* in choice variety. Amongst them is the plant, with very small growths, that won the Bateman prize some years ago; it is a superior variety, but not equal to one purchased from Messrs. Veitch, which Mr. Clements considers as being not only the finest in the collection, but the most beautiful form of this fine Dendrobe he has ever seen. The growths are rather slender, but the flowers are described as really grand. Some other examples of this species are maturing twelve long growths. *D. Falconeri* is good, but a finer plant in a cooler house has produced two hundred flowers. Very good are *D. crassinode* and *D. Bensoniae*, of which there are about fifty plants, and *D. McArthurii* is very strong. On the side stage are remarkably fine specimens in pots of *D. Schroederi*, *D. densiflorum*, and some others, 2 to 3 feet in diameter; and *Lælia autumnalis* has made eighteen growths. The house is rendered further attractive by some well-grown *Nepenthes* (*Hookeriana*, *elongata*, and *Rafflesiana*), with a profusion of fine pitchers.

The Cattleya house contains a great number of valuable specimens, remarkable for their thick leathery leaves and deep green colour. Of *C. Mendeli* there are five to six dozen excellent plants, and about the same number of *C. Trianae*. *C. Warneri* is represented by several plants of extraordinary substance, and *C. gigas* is equally fine. In this structure are many plants of *Odontoglossum vexillarium* which have made five or six growths, and numbers of *O. Phalænopsis*, *O. Roesei*, and *O. Pescatorei* in superior condition. Mr. Clements is averse to high night temperatures. This house at night ranges from 55° to 60°, and it is scarcely possible to imagine plants in a more thoroughly satisfactory state.

The *Odontoglossum* house contains numerous and healthy examples of the several species. There are hundreds of plants of such as *O. Alexandræ* and *O. cirrhosum* of various sizes, with superior specimens of *O. Andersonianum*, *O. citrosimum*, *O. grande*, and others; *Masdevallias* are also extremely healthy. The system of culture adopted is to maintain a regular temperature, somewhat cooler in summer and warmer in winter than is generally adopted, and it is evident the plants enjoy their treatment. A mixed house, as its name implies, contains a varied assortment of plants, some of which were flowering, including several examples of the charming *Cattleya marginata*, *Oncidium Rogeri*, *O. cruentum*, and *Odontoglossum* in variety. Noticeable was a very healthy plant of *Lycaste Skinneri alba*, with four fine growths; indeed, many Orchids were noticeable

that cannot be particularly referred to, but sufficient has been said to show that Mr. Wilson's collection is a very fine one. The plants are also in unsurpassable condition, as all will admit who visit the "snuff mills" at Westbrook. They will learn, too, even if they are prejudiced against it, that certain benefits attach to the peculiar stimulant, for Mr. Wilson has built some half dozen churches and schools, and is in many ways a benefactor to the district. A large span-roofed vinery affords agreeable shade to many Orchids, and the Vine—for there is only one—produces two hundred bunches of Grapes annually, averaging 2½ lbs. each. This house was further accommodating a number of excellent Azaleas. There is also a small conservatory and stove particularly clean and enjoyable. The pleasure of a visit to this garden is greatly enhanced by the courtesy and genial converse of its excellent manager, Mr. Clements.

## CHRYSANTHEMUM SHOWS.

### LAMBETH AND PUTNEY.

**LAMBETH.**—First on the list of Chrysanthemum Shows was that held on the 10th, 11th, and 12th inst. by the young urban Society located in the borough of Lambeth; and taking into consideration the lateness of the season, the early date fixed, and the difficulties attendant on the production of flowers "within a radius of a mile of the Elephant and Castle," the Society may be deservedly complimented upon the excellence of their exhibition. As usual the Show was held in the Borough Road Lecture Hall, and the general arrangements, which devolved upon the Honorary Secretary, Mr. W. T. Summers, were appropriate and tasteful. The stands of blooms were principally arranged upon tables down the centre of the Hall, and the standards were placed in lines near the walls, the centre of the tables and other spaces being occupied by miscellaneous plants contributed by the members. At the upper part of the Hall was a large group of foliage plants from Messrs. John Laing & Co., Forest Hill, which formed a most agreeable background. The number of exhibits was below that of previous years, but that might be expected, and it is only surprising that so many flowers could be cut thus early. The standard plants were neatly trained, but the flowers were small, although in most cases well formed. Mr. Wilshe secured the chief prize in several of the classes devoted to these plants with specimens of medium size, and he was closely followed by Mr. Addison. The cut blooms were generally good, and in one or two instances excellent. In the classes for twelve or six incurved varieties Mr. A. Ball held the premier position, his collection including good representative flowers of Beverley, Golden Beverley, Nil Desperandum, Prince of Wales, and George Glenny. Mr. Crisp's first-prize stand of six blooms of the variety Mr. Bunn was very even and good. In the two principal reflexed bloom classes Mr. Wilshe was first with flowers of medium quality. The Anemone varieties were rather poor, but the Japanese varieties were well represented. Among the latter Mr. Tracy's six blooms of James Salter were especially noteworthy for their size and form, and well merited the premier prize in the class. The same exhibitor obtained the prize offered for the best twelve Japanese blooms with a good collection, including fine flowers of James Salter, Fair Maid of Guernsey, and Bismarck. Mr. Clarke's collection of six also included fine examples of The Cossack, Elaine, and Garnet. The prize for the premier bloom in the Show was awarded to Mr. Wilshe for an exquisitely formed flower of George Glenny.

**PUTNEY.**—Last year this Society held its first Show, at which blooms were staged equal to any at other metropolitan exhibitions. This year the blooms as a rule were considerably smaller, the date of the Show being fully a week too early. Some of the flowers had evidently been forced, which necessarily affected both their substance and colour; and several plants, especially the Pompons, presented a drawn appearance. Yet notwithstanding the drawbacks of the season some excellently grown plants were exhibited, and several flowers of great merit were staged, and the large assembly room, which was quite filled, presented a very gay appearance.

In the nurserymen's group of twenty-five plants, distinct, Mr. Moore of the Richmond Nursery, Putney, won the first position with dwarf fresh specimens, very fine in foliage, and containing several good blooms; Mr. Stevens, St. John's Nursery, Putney, closely following with a well-bloomed collection, but the plants rather drawn. In the gardeners' corresponding class Mr. Whittaker, gardener to T. Williams, Esq., was easily first with admirably grown plants, fine in foliage and blooms; Mr. Ansell, gardener to J. Reid, Esq., being a very good second. In the classes for six and four specimens respectively Mr. Handley, gardener to Miss Pearson, Victoria Road, Wimbledon, won both the first prizes with unquestionably the best plants in the Show. The plants had been stopped once, and were then trained in a natural upright position, each bearing blooms of exhibition quality. Mr. Whittaker and Mr. Pithers, gardener to C. F. Williams, Esq., Munster House, had prizes in these classes with dwarf-trained plants. Mr. Whittaker

was also the premier winner in the classes for six Pompons, a specimen Pompon (White Oedo Nulli), and a large-flowered specimen (Triomphe de Nord). Messrs. Ansell, Handley, and Pithers taking other prizes in these classes.

**Cut Blooms.**—Mr. Handley, gardener to T. D. Galpin, Esq., Belsol House, Putney Heath, was an excellent first in the class for twenty-four incurved varieties, very good amongst which were Alfred Salter, Queen of England, Pink Venus, John Salter, Prince of Wales, White Venus, Empress of India, Beethoven, Novelty, and George Glenny; Mr. Handley being a good second with smaller but compact and well-formed examples. The same exhibitor obtained the same positions in the class for twelve blooms, both staging excellent stands, especially the former. For six blooms Mr. Bentley, gardener to Sir Thomas Gabriel, Bart., Edgcombe Hall, Wimbledon, secured the first position with nearly perfect flowers of Empress of India, Queen of England, White Globe, Prince Alfred, Novelty, and Alfred Salter. Mr. Harding was a good second, and Mr. Kendall third. The last-named exhibitor had no opposition in the Anemone-flowered class, and was awarded the first prize. Mr. Harding, who is evidently a skilled grower, staged by far the best blooms in the Japanese classes, but by a slight and innocent mistake in staging he could not be awarded the first prize, but was strongly recommended for an extra prize of equal value if possible—Mr. Bentley being placed in the first position. Mr. Harding was placed first in the class for six. The best blooms in these classes were Elaine, Red Dragon, Gloire de Toulouse, Nuit d'Hiver, Fulcon, Fulgore (very pale), Peter the Great, Blanche of Castille, James Salter, Plantagenet, and Criterion.

Prizes were also offered for stove and greenhouse plants and Ferns, in the former class the chief honours going to Messrs. Kendall and Stevens, and in the latter to Handley and Kendall, all staging creditable collections. Table plants were well shown, Mr. Pithers being an excellent first with bright fresh examples of Crotons Queen Victoria and Weismannii, Cocos Weddelliana, Dracena Cooperi, Aroca crenata and an Acalypha. Mr. Whittaker was a very good second. This exhibitor also staged the best Zonal Pelargoniums, White and Salmon Vesuvius being especially attractive. Groups of plants arranged for effect (the prizes given by Mr. Stevens) were excellent. The two collections of Messrs. Kendall and Pithers were extremely close in point of merit, but the flowers in the former, principally Roman Hyacinths, turned the scale in Mr. Kendall's favour. Extra prizes were deservedly given to Mr. Kendall for remarkably fresh and dwarf Cockscombs, Mr. Stevens for a beautifully arranged wreath, and Mr. Pithers for bright Celosias. Bouquets were generally too crowded and lumpy. The best hand bouquet was exhibited by Mr. Ward, gardener to D. Morgan, Esq., Roehampton House; and the best arrangement of Chrysanthemums and Maidenhair Ferns by Miss Chard.

Fruit was generally good, Apples especially. Messrs. Ansell and Milner were the prizewinners in the Grape classes, the former being first for black, and the latter for white Grapes. Mr. Milner was also first for dessert Apples with Ribston Pippin, Cox's Orange Pippin, and Scarlet Nonpareil; and Mr. Kendall for culinary Apples with Cellini, Cat's-head, and Nelson's Glory. Warner's King, Alfriston, and Blenheim Pippin were well shown. Mr. Fanning, gardener to Madame Digby, had the principal prize for Pears.

Vegetables were excellent; one of the best features of the Show. The special prize for eight dishes, distinct, given by F. Vokes, Esq., was won by his gardener (Mr. Jeffrey), but only by one point. His collection included Veitch's Autumn Giant Cauliflower, of unsurpassable quality; excellent Savoy, Potatoes, Celery, Tomatoes, Mushrooms, Cucumbers, and a dish of Seakale. Mr. Kendall was second; his Mushrooms, Brussels Sprouts, Tomatoes, and Beet being very superior. In the class for six dishes the prizes went to Messrs. Jeffrey, Fanning, and Whittaker respectively, all staging superior produce.

Such is an outline of this very creditable Show of this young Society—a Society which includes a number of good gardeners, has a most competent Secretary in Mr. Moore, as able and industrious Committee under the efficient presidency of Mr. Pitt, and a valuable supporter in Mr. Stevens, and only needs the generous support of the district, which it deserves, and it should then produce one of the best autumn shows in the suburbs of London.

## NOTES AND GLEANINGS.

At the meeting of the Fruit and Floral Committees of the ROYAL HORTICULTURAL SOCIETY to be held on Tuesday next, 18th inst., Mr. R. Gilbert, Burghley, proposes to exhibit a group of his fine double Primulas, also a collection of Grapes. Mr. P. McKinlay, Penge, will exhibit a large collection of Potatoes. From the Society's Gardens, Chiswick, will be sent a collection of Abutilons in flower. The competition for Messrs. Suttons' prizes promises to be very spirited. An interesting meeting may, therefore, be confidently expected.

— THE CHRYSANTHEMUM SHOWS have now commenced, and some of the societies offer liberal prizes, including several

valuable cups, &c. At the Walton Show, which is held to-day (Thursday), a silver watch will constitute the principal prize. On November 19th-20th the Borough of Hackney Society will hold their Exhibition at the Royal Aquarium, and among the prizes will be eight silver cups, five valued at £5 each and three at £4 each. At the Kingston Society's Exhibition on November 20th-21st a champion challenge vase valued at twenty-five guineas, and £3 in cash, are offered for the best collection of forty-eight blooms consisting of equal numbers of Japanese and incurved varieties. The Croydon Society will hold their Show on November 21st-22nd, and a silver watch is offered as a special prize by Mr. C. S. Bowman, Croydon, for twelve cut blooms of incurved varieties. At both the South London and Camberwell Societies' Exhibitions, November 24th-25th, a silver cup will be awarded for the best six plants, and a silver watch for twenty-four cut blooms. A silver cup will also be competed for at Sheffield on the 24th; and good prizes are offered at Liverpool on the 18th, and Birmingham on the 26th inst.

— THE Hon. Secretary (Mr. A. Chancellor) of the RICHMOND HORTICULTURAL SOCIETY informs us that the numerous applications for schedules and notifications of intending exhibitors from all parts of the country suggest that the Society's first autumn Show of CHRYSANTHEMUMS, fruit, &c., to be held at the assembly rooms of the Castle Hotel, Richmond, on the 18th and 19th inst., will be an extensive one.

— A LARGE number of ORCHIDS are now flowering in Mr. B. S. Williams' Nurseries, Upper Holloway. About thirty species and varieties are in flower, and many of them can rarely be seen in more excellent condition. *Cypripediums* are well represented; the most noticeable being *C. insigne* Maulei, *C. venustum* spectabile, *C. Schlimii* alba, and *C. Roezlii*; while fine specimens of *C. insigne* will shortly be grand. The diminutive but pretty *Pleione*s are in good form, *P. Wallichii*, *P. maculata*, and *P. lagenaria* being the most attractive species. The bright little epiphyte *Sopronitis cernua* is also flowering freely on a block. *Oncidium ornithorhynchum album* forms an agreeable contrast with the purplish flowers of the species. *Burlingtonia decora picta* is bearing numerous peculiar and pretty flowers, the white labellum and purple-spotted sepals and petals rendering it very distinct. *Calanthes*, *Oncidium*, *Odontoglossum*, and *Vandas* are all in excellent condition, the fine Dalkeith variety of *Vanda tricolor* being especially noteworthy. The *Restrepia*s are represented by *R. antennifera* and *R. maculata*, both pretty, the former being somewhat darker in colour than the latter. Many other fine Orchids are in flower, which we have not space to notice at present.

— ONE of several very distinct and noble-looking species is *LYCHNIS FULGENS*, giving a display of colour in season hardly to be expected when planted in a mass in a warm border. Seeds sown early last spring produced several young plants strong enough to flower this autumn; and there is a great variation in the colours, passing from bright scarlet to dull crimson. The furcate fleshy rootstocks prefer a rather dry position during the winter. *L. Senao* is also an attractive species. It grows a foot or more high, erect, each stem bearing terminal flowers often 8 inches across, of a bright scarlet colour and very durable, and the plant is perfectly hardy in the south of England.

— THE three following are among the best of all the FRITILLARIAS known to cultivators, and all are of recent introduction, at least to commerce. *F. recurva* is a handsome little species, varying greatly in height, from 6 to 12 inches, each stem bearing a solitary flower, which is bright scarlet marked with yellow and exceedingly showy. *F. pudica* is also a very showy species, growing from 6 to 9 inches high, the stems supporting from two to six pendulous flowers of a bright golden yellow colour. *F. atropurpurea*.—This species, a native of Oregon, produces dark brownish-purple flowers chequered with yellow on very slender stems about 1 foot or more high. All the Fritillarias are handsome, and the lover of hardy bulbs should secure a collection.

— THE pretty little VERONICA REPENS has been known in our gardens for a considerable time as one of the best plants for covering spaces on rockeries, &c. Lately, however, and notably in the season just past, it has been tried for carpet bedding as a groundwork, for which it is well adapted. It grows rapidly, requires no clipping except the edges. It is propagated very easily, and is perfectly hardy.

— AMONGST scarlet-flowering hardy border flowers the

semi-double *GEUM OCCIDENTALE* (figured on page 127, vol. xxxv.), stands high; it is to be much esteemed, not only for its large bright scarlet flowers, but also on account of the long period it continues flowering. Commencing in early summer it only discontinues flowering when severe frosts destroy the stems. It is most suitable for bouquets. One thing in favour of its greatly extended cultivation is the fact of its coming true from seed.

— WHERE a first-rate WHITE DAHLIA is required, a correspondent highly recommends Guiding Star; it is one of the bouquet varieties, pure white, and of excellent form; while the flowers are produced in abundance.

— AT Newton Hall, Stockfield-on-Tyne, there is in bloom this season a *DRACÆNA INDIVISA* of the following dimensions:—Height of plant, 14 feet; spread of leaves, 6 feet 4 inches; length of flower spike, 4 feet 8½ inches; diameter of flower spike, 2 feet 8 inches.

— AMONGST recently introduced hardy plants very noticeable is *CALANDRINIA NITIDA*. The leaves are about 4 inches long, oblong ovate, smooth and fleshy, thus differing materially from the other perennial species in cultivation—viz., *C. umbellata*. The flower stems are from 6 to 9 inches high, bearing several flowers at the top, which have green fleshy calyces spotted with black, and the petals are bright magenta, the flower being about 1 inch in diameter. In a bud state the flowers are pendulous, but erect when expanded. The plants we have were raised from seed this year, and have made large fleshy rootstocks which are now breaking freely. The late frosts have injured the foliage of the plants which are planted outside, but in a pit we have flowers yet to open. It is a valuable addition to the limited number of species known to us.

— THE TURKISH HAZEL-NUT TRADE.—A considerable trade has sprung up of late years between the Trebizond district and Great Britain in the article of Hazel-nuts, which are a very important source of wealth in the coast extending from a little south of Batoum to Kerasund. Upwards of £20,000 worth per annum are shipped to England, the chief supplies of the best nuts coming from Tireboli, between Kerasund and Trebizond. Walnut trees, too, are largely grown in the forests of Lasisat, partly for the sake of the nuts, but principally for the Walnut-tree knobs, which are much in request in France.

— MR. WILLIAM TAYLOR, Longleat, writes to us as follows on RIDGWAY'S HEDGE TRIMMER:—"I have great pleasure in seconding your recommendation of this implement. I have personally used one of the smaller size for several days in cutting the closely-cut Yews and similar shrubs which form our winter garden, and have found it exceedingly useful. Even the upright lines of irregular curves I have with practice succeeded in cutting perfectly with it, and this in less than a quarter of the time it would take to do it with the shears. It is a real boon to those who feel that there is some of the trimming which is not likely to be done satisfactorily by anyone but themselves, and yet can ill afford the time necessary for the purpose. For ordinary hedge-trimming it needs no skill; a lady could favourably compete with a professional armed with the famous Dumex hook. There will now be no excuse for the slovenly practice of cutting a hedge downwards."

#### THE LARGEST OAK IN BRITAIN.

THE Rev. Basil Edwards of Blaisdon, in asking what tree may justly claim the above title, has raised an interesting question. I presume that the reverend gentleman, who couples with his inquiry the belief that the Oak now standing at Newland in Gloucestershire is the largest at present extant, would be inclined to award the palm to the tree possessing the greatest girth of trunk. If so, I am afraid that the claims of the Newland Oak must fall before the superior dimensions of the massive bole possessed by the giant tree at Cowthorpe in Yorkshire. This Oak, I believe, exhibits the largest circumference of trunk presented by any living example of the species. It is situated in the middle of a field, about three miles from the pretty little market town of Wetherby. Hard by stands the old church of Cowthorpe, quaint and diminutive, and just across the pasture flows the clear stream of the winding Nidd. On every hand the surroundings are beautiful, and the huge proportions of this remnant of the "buried past" furnish a pretty centrepiece in as lovely a bit of rural scenery as the eye could look upon.

This tree, as may be supposed, has not failed to attract the attention of writers on old Oaks. The modern editor of Evelyn



(Dr. Hunter), in speaking of its dimensions, says they are "almost incredible." He tells us that "close by the ground it measures 26 yards in circumference. Its height is about 80 feet, and its principal limb extends 16 yards from the bole;" and, in conclusion, he states that "neither of the Oaks mentioned by Mr. Evelyn bear any proportion to the one at Cowthorpe."—"Silva," vol. ii., p. 197.)

I much regret that in a recent visit to this celebrated tree I was unable to test the accuracy of Dr. Hunter's estimate of its dimensions, as given above. Certainly the trunk is of gigantic proportions, and must at any rate approximate to the size set forth by the learned doctor, and I have no hesitation in affirming that its girth far exceeds that of the Newland Oak. Of its branches, which are said to have once extended over half an acre of ground, one only now remains. Every year its broken and weather-beaten trunk is crowned with a plentiful growth of green foliage; and some idea of the size of the roomy hollow of its stem may be gathered from an incident related to me by a Wetherby friend, in whose veracity I have implicit confidence.

This gentleman informed me that upon the occasion of a school anniversary, at which he himself was present, no less than seventy children were packed within the hollow trunk of the Oak at one time, and whilst in that position they heartily sang the National Anthem.—THOMAS B. TROWSDALE.

### REIDIA GLAUDESCENS.

THE species comprised in the extremely large and peculiar natural order Euphorbiaceæ are remarkable for their great diversity in habit. The majority are herbaceous plants with simple leaves and insignificant flowers, and are widely distributed through temperate and tropical countries. Some, the inhabitants of dry regions, assume the appearance of Cactaceæ plants, with strangely formed succulent leafless branches and stems. Others, chiefly Crotons, are largely cultivated in our hothouses for the beauty of the foliage, and a few species of Euphorbia and the well known Poinsettia are general favourites owing to their brilliantly coloured bracts. The Phyllanthuses and Xylophyllas have flattened leaf-like branches, on the margins of which are produced bright and pretty little flowers, and are well worth cultivating; but for general elegance *Reidia glaucescens* can scarcely be surpassed by any of its numerous strangely varied congeners. This plant was introduced to the Royal Gardens, Kew, from Siam in 1864 by Thomas Christy, jun., Esq.

The genus *Reidia* comprises about a dozen species, chiefly natives of India, but mostly inferior in decorative value to the one under consideration, which, although of such recent introduction, has become a great favourite with cultivators. It owes much of its gracefulness to the slender branches along which the oval leaves are arranged in a two-ranked (distichous) manner, each branch greatly resembling a pinnate leaf. From the axils of the true leaves hang the flowers on filamentous peduncles, and to a casual observer the flowers appear to spring from beneath the branches. The flowers are small and unisexual, those at the lower portion of the branches being staminate, with four deeply fimbriated sepals, and those on the upper part pistillate, with six similar sepals and longer peduncles. The sepals in both forms are of a greenish tinge towards the margin, crimson in the centre and on the under surface, the peduncles also being tinged with red.

The plant is of easy cultivation, as it only requires a light open compost of loam, sand, and peat or leaf soil, with good drainage, and a brisk moist stove temperature. Under such liberal treatment it thrives rapidly, and as the small but pretty flowers remain on the plant for a considerable time during summer and autumn it amply repays for cultivation; in fact, even when its flowers have fallen, the graceful habit of the plant renders it very attractive and distinct for associating with other plants in groups.—L. CASTLE.

### HINTS ON LANDSCAPE GARDENING.—No. 9.

#### PLANTING ON SLOPES.

DOWN the head of a glen a stream of water falls, dashing and foaming among projecting rocks, its spray flashing in the sunlight with a beauty as wonderful as it is transient. The cascade is a long one, for the steep slope is some 40 feet from top to bottom; it is therefore worthy of the position, and is all the more effective from the happy manner in which its surroundings blend with it. The ravine trends downwards for

some distance from north to south, and when it had to be treated as an ornamental feature clothing and shelter were of especial importance about its head to the north, and also about its eastern side. Now, the soil was shallow, light, and poor; the trees selected were therefore Beech and Silver Fir, both growing freely and to a large size in such soils, bearing exposure to cold and high winds equally well, exhibiting nothing of that storm-beaten stunted aspect which most trees assume when growing under such adverse conditions, but becoming so ornamental as to form a special attraction in themselves. A few Scotch Firs and Larches were also introduced in irregular clumps along the east side, advancing boldly to the edge of the ravine at some points, at others retreating to a considerable distance, no formal lines being made anywhere. In such a soil the Larch does not become a fine tree. Growing with rapidity for about twenty years it is an excellent nurse for the permanent trees, answering well however much exposed the situation may be, provided the young trees are not more than a yard high when planted and it has a little monthly attention in the first two seasons of growth. Some of them when the branches are heavy with foliage always become wind-rocked before the roots are established, and then, unless set upright and the soil made firm about the stems, they do not grow, being swayed about by every gust of wind. Prompt attention to this and to thinning as they become large enough to require it not only insures success but is profitable. Larch poles, being useful for a variety of purposes, always command a ready sale.

Planting for profit is, however, not much thought of in the treatment of a glen or ravine and its surroundings. If it were I should have used Spanish Chestnut instead of Beech, for it cannot be too often repeated that this Chestnut answers well in a poor thin soil, growing as fast as the Beech. Yet the Beech becomes ornamental much sooner than the Chestnut, and therefore in planting for shelter as well as for effect preference was given to it. Few deciduous trees are ornamental when young, and therein lies our difficulty. To plant well it is requisite to understand the character of trees when fully developed as well as their requirements as to situation and soil; ignorance of these important points has led to many a failure.

Lower down where the glen opens out into a valley the surface was much broken, other glens ending near the same point so that there were high ridges and abrupt slopes forming an irregular but picturesque semicircle, affording many suitable sites for planting, which was so done as to impart a distinct effect here as well as to blend with that of the wide slopes of the valley beyond. A dozen or two Beeches were the only tall-growing trees used, and these were put singly upon prominent positions, and so far apart that for a time the shrubby undergrowth surrounding them was the most important. Slowly and surely, however, did the Beeches spread their branches upwards and outwards, and I ought to add downwards, for with plenty of space they become very beautiful, the lower branches sweeping the ground and the upper ones springing straight out from the massive trunk, the whole forming one of the finest combinations of elegance and strength in nature—pleasing even when bare of foliage, and it is to this I am desirous of calling particular attention. Few deciduous trees are so ornamental in winter, and in extensive pleasure grounds a grove of them makes a telling feature.

It was originally my intention to have made a plan of an ordinary kind to illustrate this paper, marking the position of a few of the most important trees with figures. This plan has gradually grown into the accompanying sketch, fig. 40, not by any means a finished one, but sufficiently elaborate to convey some idea of how ground may be broken up and rendered ornamental with water, rocks, and trees. Very few shrub groups have been sketched, but space for large quantities would be found among the trees as well as on the slopes. The slope on the right of the main stream ought only to be broken with a few clumps and isolated specimens so as not to obstruct the view from the path. The left bank may be quite clothed with shrubs wherever rocks do not occur, and there should be plenty of Ferns and ledges along the margin of the water. Avoid a superabundance of evergreen shrubs. If such a scene did not change with the seasons it would be sadly deficient in the freshness of spring, the full rich wealth of summer and the brilliant tints of autumn, all of which we look for and admire in turn. Let us be sure to have plenty of deciduous growth, no matter how brief may be the duration of its blossom or foliage, and with it enough of that which retains its foliage in winter to give warmth and greenery then. I hope soon to prepare some drawings of cascades in sections on a sufficiently





Fig. 40.—PLANTING ON SLOPES.



large scale to show how they are constructed, and also to explain the principles that should guide us in the formation of ornamental pieces of water.—EDWARD LUCKHURST.

### THE OLD MARKET GARDENS AND NURSERIES OF LONDON.—No. 27.

DURING that period when English horticulture was, if not in its infancy, at least in its childhood, there was much to attract the inquiring young gardener to the west of London. He might have had access without much difficulty to the Royal gardens of Kensington Palace, the Apothecaries' Gardens at Chelsea, and to the gardens attached to Ranelagh House, Fulham Palace, Holland House, to Lord Burlington's residence at Chiswick, and to other places where amateurs of high degree made experiments in nursery gardening. We might therefore expect to find that many gardeners would be led to take ground about the western suburbs near to the above, and such was actually the case. Possibly, however, they did not to the extent that seems probable with these attractions in view; but doubtless, as the nurserymen of the past, like those of the present, had to consider what were likely positions for obtaining business, there were good reasons why some preferred settling in other suburbs of London. The citizens in their holiday excursions were fond of going northward to the breezy heights of Hampstead or Highgate, eastward to the well-known Forest, or crossing the Thames they sought the Surrey fields and hills. Some, it is true, did go westward, following the track of the Londoner's river, but they kept near the stream in the general way, and the mighty movement westward which has been so notable in this century had not commenced. Hence we find few memories of nurserymen beyond Kensington until recent times; and though there was some land under cultivation for the London markets in the days of the Georges in the districts now to be noticed, the holders of it pursued methods of farming rather than of market gardening, where every effort is made to turn the land to best account, and to raise vegetables by fixed periods for immediate sale. Names now, or until recently, in existence between London and Acton bear witness to this, such as Shepherd's Bush Farm, Old Oak Farm, Notting Barn Farm, and Wormholt Farm, where corn was grown not long ago, and a large number of cattle, sheep, and pigs kept until the growth of the metropolis brought about a change. But we may still see cows grazing near Uxbridge road, within an easy walk of once courtly Kensington. Notting Barn Farm, the land belonging to which has now been nearly all cleared for building, was between Holland Park and Kensal Green; it is marked on most old maps of London, but has vanished in 1879. At one period principally a grass farm, we presume, subsequently the occupiers found it advantageous to devote ground to market gardening, and from growing Potatoes and Cabbages, like other farmers similarly circumstanced, they came to cultivate a variety of plants to meet the new demands of the London markets. As an historian of the county tells us, that the farmhouse was surrounded by numerous barns and outbuildings, which, used at first for storing fodder, were afterwards found serviceable in other ways, it might be conjectured that they gave name to the place, but this was not the case. The public way from the Uxbridge road to Kensal Green passed formerly through the farmyard, the house of which was in the olden time a manorial residence. Knotting Barnes or Knotting Barnes does not appear on very early records, but in 1524 we read that the manor contained several hundred acres, nearly two hundred of which were wood, a remnant of the old forest of Middlesex, which once reached nearly to the river's bank at Hammersmith. For two centuries afterwards only a small portion of the land was brought under the plough, while much of the rurality of the estate remained until 1870, according to Faulkner. Describing the prospect from the heights of Holland Park in the direction of Notting Hill and Shepherd's Bush, he says that "there is a lovely view, the grassy valley towards the north appears to have undergone little change for ages, although the distance from London is not three miles. The traveller may imagine himself embosomed in the most sequestered part of the country, and nothing is heard to interrupt the course of his meditations but the notes of the lark, the linnet, and the nightingale." This was too charming to last, and another author writing of this neighbourhood before Her Majesty came to the throne, had to say that it showed recently an "accumulation of buildings." We wonder whether even he would know the place now. With that vagueness which so often annoys us in the old histories, Bowack tells us that there was formerly a Hop planta-

tion of 20 acres near the Uxbridge Road, about three miles from Tyburn, which was presumably somewhere in the Notting Barn lands, but the exact position of which is unknown. We have wondered at times why there have been so few attempts at Hop culture in the favourable positions offered by west and north Middlesex.

Faulkner states that Charecroft, part of the charity land belonging to the district, was in 1620, or about that time, occupied by Mr. Middlemist, who had an establishment called the Cape Nursery. This we cannot connect with any nursery of the present day. Most of these about Notting Hill are of recent date. Mr. Tavinor's, however, near the extremity of Kensington Gardens westward, probably represents some ancient nursery; and Mr. French's in Ladbroke Grove bears signs of age, though the land now attached to it is of small extent, yet it is turned to good account. The noted establishments of Messrs. Hopgood & Co. near Shepherd's Bush, which we remember from frequently passing it some ten or twelve years ago, has disappeared from that locality, being succeeded by houses. One line of these, called Hopgood Street, remains as a record of the floral treasures that have vanished. The firm is, however, still in existence, and flourishing I hope, having nurseries in Addison Road, Kensington, to the north of Notting Hill. Brondesbury Park, comprising some rich land well situated, was, when it ceased to be a private residence, occupied in part by Messrs. Pounce & Sons as a nursery and market garden, and as a sale of plants and implements took place there towards the end of last year we infer that the ground is to be devoted to other uses. Mr. Boller of Kensal New Town is well known as an exhibitor of succulent plants and other novelties—especially miniature plants. Shepherd's Bush, named originally from a sign of an old inn of "The Shepherd in the Bush," has had its garden ground interfered with sadly of late. Many new streets have been built, and what is even less agreeable, garden land has been converted into brick fields. No longer does Wood Lane lead to anything resembling a wood, though Wormholt Scrubs and Old Oak Common remain, and there are market gardens between here and Acton divided off by hedges, in which grow dwarf Oaks and Maples here and there, not commonly observable in London hedges. I suspect that the pretty orange-tip butterfly has almost deserted the fields in which we have frequently seen it in April, and that metallic-looking moth, the Burnished Brass, has doubtless sought a quieter abode. Some fifty years ago Shepherd's Bush was rather famous for its bee-keepers, who boasted of the quantity of honey they obtained, considering that their bees had usually only a short season. The insects at that time probably got most of their honey, not from gardens, but from the commons northward, dotted with Heath and Fosse. In 1838 an amateur of Shepherd's Bush, Mr. Salter, possessed what was supposed to be the best collection of Irides in England, many of his varieties having been raised from seed. He was also a noted grower of Bees and Dahlias. About that date Mr. Plimly had about nine acres under cultivation there. In his nurseries he produced numerous Geniums and Dahlias; he was famous for his pines, from which he sent many "Queens" to the market. Lawn Nursery, owned by Mr. Morgan, now overlooks the Green, situate between the two main roads that run across it, and on the north side is Mr. Hart's nursery, both being of moderate pretensions and extent.

Still "stepping westward," and passing Starch Green, which has yet a little open ground, but which by its name suggests laundries rather than market gardens, we reach first Acton and then Ealing. Acton, so say some, was primarily "Oak-town," from the Oaks that environed it, but the most of them have been felled. It is somewhat singular, however, that there should be at Bolla Bridge, Acton, a market gardener bearing the name of the place. Lyson notes that in 1793 out of the 3000 and odd acres belonging to Ealing only 250 were in the hands of market gardeners. The ground thus occupied at Ealing has increased since then, consequent upon the disappearance of market gardens near London. Gunnersbury Park near Ealing is memorable as having been an early though not a trade nursery. For a long time it was famous for its Orchids, and it had early specimens of the Orange and Tree Ferns. At Ealing Dean in the present day Mr. Smith has made Cyclamens and Poinsettias his specialities, and he also sends to the market large quantities of Begonias, Cinerarias, and Fuchsias. Mr. Dean of Ranelagh Road has devoted much attention to spring-flowering plants, such as Primulas, Pansies, and Polyanthes. At Acton Mr. Reeves is a renowned grower of



of a bed being formed of fermenting materials are desirable. The bed should be formed of stable litter and leaves previously thrown together and mixed, and in forming the bed tread the materials down firmly, placing 2 or 3 inches of light soil on the surface. When the temperature is between 70° or 80° the roots should be introduced and spread out, afterwards watering with tepid water. Seakale can be forced very readily in this way, but a temperature of 60° to 65° is quite sufficient, and a covering of some kind will be necessary to exclude air and ensure blanching. We, however, prefer to force Seakale and Rhubarb in the Mushroom house, fresh roots being introduced at fortnightly intervals. Chicory can also be forced very successfully in the Mushroom house. Peas are sometimes forced, but unless there is ample accommodation a house or pit where abundant ventilation can be afforded, and the plants kept near to the light with a temperature not exceeding 50° by artificial means, the return is not commensurate with the space and labour involved. Early Premier Gem, Blue Peter, and Little Gem are the best varieties for the purpose. Beds should be made in pits and frames in readiness for early crops of Radishes, Carrots, and Potatoes. A depth of about 4 inches of light rich soil will be sufficient for the Radishes, that or a little more for the Carrots; indeed the same bed will do for both, sowing the seed in alternate rows about 4 inches apart. Early White and Early Scarlet Forcing Turnips with French Breakfast are the best Radishes, and if a long one be wanted, Wood's Frame. Of Carrots, French Forcing and Early Nantes. The best Potatoes—Veitch's Ashleaf and Myatt's. It is important where forcing operations are extensively carried on to have on hand a good supply of fermenting materials fit for immediate use. Under favourable conditions ventilate freely frames which contain Radishes, Cauliflowers, Lettuces, &c., as the more they are insured to cold the better they will endure severe weather. Make an occasional sowing of French Beans according to the demand and space at command, sowing Mustard and Cress to maintain the supply unbroken. Where there is a house devoted to Tomatoes, a light well-ventilated structure, attention will be needed frequently to keep up a succession of bearing wood, cutting out exhausted growth and training in their place young growths which show fruit freely. The plants that have been some time in bearing should have top-dressings of half loam and half manure as fresh roots appear on the surface, watering as may be necessary with weak liquid manure. A temperature of 60° to 65° at night and 70° to 75° by day will be necessary to ensure their continuous bearing.

**Mushroom House.**—Continue to make up successional beds of prepared material. Early beds will now be coming into bearing, and should be watered with tepid water. See that the surface of the beds in any stage does not become extremely dry, but avoid making them overmoist. A moist atmosphere will need to be maintained, sprinkling the walls, paths, &c., occasionally, and a temperature of 55° to 60° secured. Though 5° less will add to the quality of the Mushrooms, yet the temperatures named are advisable where the house is employed for forcing Rhubarb, Seakale, &c., as the latter, from the backward state of vegetation this year, will require more heat to excite them as well as more time to develop.

#### HARDY FRUIT GARDEN.

Planting fruit trees should be proceeded with as soon as the majority of the leaves have fallen. A few hints as to the most suitable aspects and varieties may not be unacceptable. Walls with a southerly aspect answer for Apricots, Peaches and Nectarines, Figs, and Vines, though with proper glass houses the culture of Vines against walls is not advisable. Nevertheless, with glass coping there is no reason why in favourable seasons fair crops of Grapes should not be obtained from Vines on walls. The following is a selection of the best varieties for the purpose named:—**Apricots:** Moor Park, Oullins Early, and Shipley's. **Peaches:** Hale's Early, Dagmar, Dr. Hogg, Grosse Mignonne, Violette Hâtive, Royal George, Noblesse, Bellegarde, Barrington, Princess of Wales, and Walburton Admirable. **Nectarines:** Lord Napier, Elruge, Violette Hâtive, Balgowan, Pitmaston Orange, and Albert Victor. Brown Turkey is the best Fig, though the Brunswick is well suited for the purpose; it grows so freely as to require more space—a high wall or building. White Marcellis is a fitting companion for Brown Turkey. **Vines:** Early Ascot Frontignan, Royal Muscadine, Early White Malvasia, Miller's Burgundy, Espiran, Black Cluster, and Cambridge Botanic Garden, with Black Hamburgh. **Cherries:** Early Jaboulay, Belle d'Orleans, May Duke, and Black Tartarian. **Plums:** July Green Gage, De Montfort, and Green Gage should be planted against south walls, as they are then earlier and much improved in size and quality. Jargonelle Pear, with Marie Louise, should be planted against every aspect, so as to afford a prolonged succession of those finest of summer and autumn Pears. East aspects suit such Plums as Green Gage, McLaughlin, Jefferson, Kirke's, Transparent Gage, and Coe's Golden Drop, Ickworth Impératrice and Late Rivers being valuable for their lateness. Similar aspects suit Cherries. To those previously named may be added Elton and Bigarreau Napoleon. West aspects answer for Pears, but the summer and autumn Pears, as Beurré de l'Assomption, Souvenir du Congrès, Williams' Bon Chrétien, Beurré d'Amanlis, White Doyenné, Louise

Bonne of Jersey, though improved in size and appearance, are frequently not so good in flavour as those grown in the open. Beurré Superfin, Louise Bonne of Jersey, Hacon's Incomparable, Durondeau, Marie Louise, Beurré Diel, Van Mons Léon le Clerc, Passe Colmar, Beurré Bachelier, Beurré d'Arenberg, Glou Monceau, Winter Nélis, Joséphine de Malines, Beurré Rance, Ne Plus Meuris, and Bergamotte d'Espéren are improved by growing against a wall. Beurré Clairgeau may be grown for its beauty and Duchesse d'Angoulême for size, Chaumontel and St. Germain requiring both a south aspect and a warm sandy soil. North aspects answer for Morello and other Cherries. Jargonelle, Williams' Bon Chrétien, and White Doyenné Pears succeed against a north wall; and culinary Plums, as Early Prolific, Prince Englebert, Mitchelson's, White Magnum Bonum, and Victoria. **Apples for Dwarf Bush Pyramid or Espalier Culture:** Irish Peach, Devonshire Quarrenden, Kerry Pippin, King of the Pippins, Cox's Orange Pippin, Court of Wick, Ribston Pippin, Margil, Keddestone Pippin, Reinette de Canada, Cockle's Pippin, and Sturmer Pippin. The above are for dessert. The following are culinary varieties:—Kewick Codlin, Lord Suffield, Stirling Castle, Cox's Pomona, Cellini, Small's Admirable, Winter Hawthornden, Yorkshire Greening, Warner's King, Norfolk Bearer, Alfriston, Dumelow's Seedling, and Hambleton Deux Ans. **Pears for Bush, Pyramid, or Espalier:** Summer Doyenné, Jargonelle, Williams' Bon Chrétien, White Doyenné, Comte de Lamy, Seckle, Marie Louise, Urbanista, Louise Bonne of Jersey, Doyenné du Comice, Beurré Diel, Beurré d'Arenberg, and Zephirin Grégoire. **Plums for Dwarf Culture:** July Green Gage, Green Gage, Oullins Golden Gage, Jefferson, Kirke's, and Guthrie's Late Green. The above are dessert. For culinary Early Rivers, Gisborne's, Mitchelson's, Victoria, Prince Englebert, and Belle de Septembre. Morello Cherry is well worth a place in every garden, as it succeeds under dwarf culture; but the others, unless grown as espaliers, are difficult to protect from birds. **Apples to be Grown as Standards for Orchards:**—Culinary: Kewick Codlin, Stirling Castle, Emperor Alexander, Golden Noble, Rymer, Blenheim Pippin, Kentish Fillbasket, Yorkshire Greening, Dumelow's Seedling, Warner's King, Northern Greening, Bedfordshire Foundling, and Hambleton Deux Ans. **Dessert Apples for Orchards:** Irish Peach, Whorle Pippin, Worcester Pearmain, Kerry Pippin, Cox's Orange Pippin, Gravenstein, Ribston Pippin, Reinette de Canada, Cockle's Pippin, Dutch Mignonne, Golden Russet, and Sturmer Pippin. **Pears for Orchard Planting:** Jargonelle, Williams' Bon Chrétien, Louise Bonne of Jersey, Beurré de Capillanmont, Marie Louise, Swan's Egg, and Beurré Diel, with Catillac for stewing. **Plums for Orchard:** Early Rivers, Early Orleans, Gisborne's, Victoria, Mitchelson's, Kirke's, Prince Englebert, White Magnum Bonum, Winesour, Wyedale, and Cluster Damsion. For planting against walls full-trained trees—i.e., the trees two, three, or more years trained, are every way preferable to trees of less size and age, as they not only come sooner into bearing, but do not make such vigorous growth. Plant as early as the condition of the trees will admit, so as to give them the benefit of the comparative warmth of the ground, and thus allow of their establishment before the ground is sodden and cold.

Wherever the condition of fruit trees is such as to render an examination of their roots advisable, it should be attended to whilst the weather is favourable. Sickly trees are frequently restored by having their roots brought nearer to the surface, and encouraged by laying-in fresh loam with a small portion of thoroughly decomposed manure, so as to encourage the formation of new fibres; and if the soil be too tenacious a portion of road scrapings, old mortar rubbish, or other gritty material may be added with advantage; but if too light an admixture of clay or marl will be advantageous. Planting fruit trees should be proceeded with, as the earlier they are planted the better; and although most descriptions of hardy fruit may with more or less success be grown on nearly all kinds of soil, the better the soil the better will be the quality of fruit produced. In most instances draining is absolutely necessary, heavy and retentive soils needing it more than light soils; in addition to which a portion of light soil, road scrapings, burnt clay, and wood ashes or charred refuse added will be of benefit; and in planting the trees, whether dwarfs, standards, or espaliers in such soils, slightly raised hillocks for planting on should be made. Light soils, on the other hand, should have well-pulverised clay or strong loam incorporated with the original soil. Pruning Apple, Pear, Plum, and Cherry trees should be proceeded with whenever the weather is favourable; but where summer pruning has been practised there will be little to do at this season. Fig trees against walls should be unfastened, the branches tied up in bundles, encased in clean straw, kept together with mats; or the trees may be allowed to remain on the walls and the surface thatched with dry fern, straw, mats, or other materials, mulching over the roots with manure.

#### STRAWBERRIES IN POTS.

Strawberries intended for early forcing should be placed in frames or pits in a sunny situation, and have air abundantly on all favourable occasions. The general stock, now that sharp frosts may be expected, should be plunged in ashes in a sheltered situation, where they will winter quite as well as those afforded the protection of a cool house. Though the demands of the plants



for water will be considerably lessened, supplies must be afforded as necessary to keep the soil thoroughly moist. Autumn-bearing plants will require to be near the glass, and a free circulation of air will be necessary. The temperature will require to be kept at 55° to 60° at night and 10° more in the daytime.

#### FRUIT HOUSES.

**Pines.**—Properly heated and ventilated pits or small houses afford the most suitable atmospheric conditions for Pines, but the closeness of these structures at this season necessitate strict attention to the ventilation, or the plants become drawn and weakly. For young stock 60° at night, or a few degrees less in severe weather, and 65° by day from fire heat is suitable. Keep the plants near the glass, and allow plenty of space. The bottom heat should be kept steady at 80°, avoiding too much moisture in the atmosphere, and water whenever the plants become dry with weak liquid manure. Suckers on the stools of the plants after the fruit is cut may be preserved until March.

**Cucumbers.**—Plants that have been some time in bearing will be invigorated by receiving a top-dressing of turfy loam, to which may be added a sixth of charcoal, surfacing with an inch of short decomposed manure. See that the soil is not too dry, guarding against over-watering, but when water is necessary give a thorough soaking with water at the same temperature as the house. Ventilate moderately whenever the weather is favourable, but avoid lowering the temperature excessively, as a chill is alike injurious to plants and fruit. The temperature should be maintained at 65° at night, and in severe weather 60°, and 70° to 75° by day from fire heat, advancing 10° to 15° with sun heat.

#### PLANT HOUSES.

**Orchids.**—All watering and syringing must be done by twelve o'clock, which will admit of the superabundant moisture being dissipated by the time the temperature lowers in the evening, which is of the greatest importance, for a wet atmosphere with a cold temperature will cause disease. A little ventilation may be necessary on warm days to prevent the temperature rising too high. *Cattleyas* and *Dendrobiums* should not have any water at the roots, except those on blocks or newly imported. *Odontoglossums Alexandræ* and *O. Pescatorei*, with others of the same type growing vigorously, will require a good supply of water, damping overhead on fine mornings with a syringe or a fine rose. Plants in flower may be removed to a drier atmosphere. *Odontoglossum leopardinum* is a grand variety of *O. Insleayi*, flowering at this season, and *Pilumna fragrans grandiflora* is one of the most charming at the dull season. The period at which any of the plants begin to grow is the best time to repot them, placing them in the most favourable position in the house. *Miltonias* may be repotted, and shallow pans are the most suitable for their growth, as they require a liberal supply of water. Any plants hanging near the roof should be lowered to quite a foot from the glass, so as to prevent their being subjected to alternations of temperature. Plants of *Dendrobium nobile* that have completed their growth and are swelling the buds may be placed in the East Indian house, and with a damping overhead on fine days they will be in bloom by the new year, very little water being given at the roots until they begin to grow. Plants coming into flower or pushing up their spikes should be thoroughly exposed to light. *Anectochili* require particular care; a little air must be left on the frames or bell-glasses, and the glass kept clean, watering only sufficient to keep the sphagnum a little moist.

**Stove.**—*Ixoras*, *Dipladenias*, and *Allamandas* afford a large quantity of flowers for cutting, but it is necessary that the temperature be not below 65° at night. The majority of stove plants do better in a temperature of 5° to 8° less at night at this season, and the atmosphere a little less moist. It is a great mistake to have a large house, or if the house be large a partition or two put in would admit of all being accommodated. Winter-flowering plants, such as *Poinsettias*, *Sericographis*, *Plumbago rosea* and *P. coccinea superba*, *Aphelandras*, *Centradenias*, *Centropogons*, *Kranthemums*, *Euphorbia jacquiniiflora*, *Thysacanthus rutilans*, &c., succeed best in a low span-roofed house or pit, where they can be kept near the glass. Winter-flowering *Begonias* require plenty of light and liquid manure occasionally. Plants that are partially deciduous—as *Clerodendron Balfourianum*, *Aristolochias*, *Bougainvilleas*, and *Allamandas*—may be allowed to go for weeks without water, but the wood must not be allowed to shrivel. *Stephanotis*, *Camptretum*, *Hoya*, and similar plants should be kept dormant by dry treatment, but the foliage must not shrivel or become very flaccid, or it will fall off. Evergreens—as *Ixoras*, *Franciscea*, *Gardenias*, *Tabernaemontanas*, &c.—must have a sufficient supply of water to maintain the foliage in good condition.

**Ferns.**—The greenhouse species and varieties require a temperature of from 40° to 45°, and the exotic species 55° to 65°, supplying no more water at the roots than is requisite to keep the plants from suffering. Where a number of *Adiantums* and *Pterises* are required for cutting or decorative purposes they should be kept near the glass to render them robust, and if grown in loam they will be stronger than when grown in peat. At this season they should have as little excitement to growth as possible. The varieties most in demand, as decorative plants and furnishing friends for cutting, are *Adiantums* and *Pterises*, which

make their appearance in a moist fernery in considerable numbers from self-sown spores. These when large enough to handle should be taken up, potted in the smallest pots (thumb) in a compost of loam, one-third of which should be small crocks, which will keep the soil from becoming sour before the plants produce roots.

#### TRADE CATALOGUES RECEIVED.

James Veitch & Sons, Chelsea.—*Catalogues of Fruits, Hardy Trees, and Roses.*

H. Bennett, Manor Farm Nursery, Stapleford.—*Descriptive List of Pedigree Seedling Roses.*

Hogg & Robertson, Dublin.—*Catalogue of Ornamental Trees, Shrubs, &c.*

Francis and Arthur Dickson & Sons, Upton Nurseries, Chester.—*Catalogue of Forest and Ornamental Trees, &c.*

F. C. Heinemann, Erfurt.—*List of Flower and Vegetable Seeds.*

André Leroy, & Angers (Maine-et-Loire).—*General Catalogue.*

#### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense. Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**PLANTING A YEW HEDGE (J. S.).**—We should obtain the shrubs at once and plant them as speedily as possible after their arrival, watering them thoroughly if the soil is at all dry. Care should be taken that their roots are not long exposed to the air, especially if the weather is dry during their removal.

**VENTILATING CONSERVATORY (M. W. T.).**—We should prefer to have the north and south ventilators arranged to open separately. During many weeks in winter and early spring north ventilation would not be required, but slight openings on the south side would be very beneficial. The north ventilators would only need to be opened in summer, and would then be valuable.

**PLANTING VIOLETS (Agricola).**—You may plant the Violets now removing them with as much soil attached to the roots as possible. You do not say whether the plants are established and ready for flowering or not; if they are, a little glass protection such as frame lights or hand-glasses placed over them would be advantageous. The end of March or beginning of April, according to the weather, is a good time for forming beds of Violets by planting small offsets. If you send 2s. 6d. in stamps to the publisher and order the manuals you name in your letter, they will be sent to you by post.

**ROSES NEAR LONDON (H. T. P.).**—We cannot undertake to answer your questions. You had better visit a few of the nurseries where Roses are largely grown, and you will thus gather much information that will be useful to you.

**WOOD ASHES FOR LAWNS (A Constant Subscriber).**—An application of wood ashes sufficient to form a thin covering to the lawn would stimulate the growth of grass and improve the lawn considerably. A dressing of soot during a still showery day in the spring would further be of great benefit in improving the turf and imparting a darker green appearance to the lawn.

**ERRATA.**—In the article on "Grapes Without Fire Heat," in our last issue, on page 371, column two, line twenty-eight, for "speedily," read "thoroughly;" and in line thirty-four, page 364, of the article headed "Rose Season," the word "these" societies should read "three" societies.

**PLANTS FOR WINDOW BOX (H. T. F.).**—Small plants of *Retinosporas*, such as *R. plumosa aurea*, *R. plicifera*, and *R. ericoides*, planted thinly have a very elegant appearance and will last for one season in London. Associated with them should be plants of suitable size of the bright-leaved *Knonymus*, such as *E. japonicus aureus*, *E. aureus variegatus*, *E. latifolius variegatus*, and *E. radicans*. Small-leaved variegated *Ivies* are also very suitable for hanging down the front of the boxes. *Skimmia japonica* and *Pernettya mucronata* are pretty berry-bearing shrubs suitable for the purpose required. Between the shrub bulbs of various kinds—*Hyacinths*, *Tulips*, *Snowdrops*, *Narcissuses*, *Crocuses*, and *Scillas*, should be planted, also such plants as *Daisies*, *Alpine Auriculas*, *Primroses*, and dwarf *Wallflowers*. All the plants named will also thrive in a London garden except the *Retinosporas*; but for town gardens few shrubs are more satisfactory than  *Aucubas*, many of which have extremely handsome foliage, and produce their richly coloured fruits in profusion.

**CLUB ROOT (W. J. C.).**—One of the best remedies that you can apply now is to dig fresh gas lime into the soil at the rate of about 20 bushels per acre. See reply to "B. T. J.," on page 358 of last week's issue.

**PLANTING CROCUSES (J. L. A.).**—You cannot plant them too soon now. If you defer planting until December many of the growths which have already issued from the corms will probably decay. It is not a good plan to make holes with a pointed dibber and place the corms in them. Drills are much preferable, as the corms can then rest on the soil, which is not always the case when planted with the dibble.

**PRUNING VINE IN GROUND VINERY (F. J.).**—The Vine, having extended to the end of the vinery, should be cut back to within about 3 feet of the end. Stop the shoots one or two joints beyond the fruit, keeping the laterals closely stopped to one joint. The water coming in at the ridge will be injurious, especially when the fruit is ripening, as it will cause a moist atmosphere when it is desirable to have a dry one.

**CUTTING ARBOUR-VITIS (Idem).**—The present is not a suitable time to

cut Arbor-Vitæ 8 or 9 feet high into the form of a hedge. It should be done in early April, or before they begin to grow, so as to admit of their becoming furnished with fresh growth before winter.

**HEATING A GREENHOUSE (York).**—Your house may be heated in the manner you show in sketch—viz., with the pipes fixed at the lower part of the roof; but could you not sink the stovehole so as to admit of the pipes being placed beneath the stage? It would be an advantage to have the piping along both sides of the house, so as to secure better diffusion of the heat through the structure; for, though the piping answers very well on one side of a lean-to, they are not so effectual on one side only of a span.

**DRESSING A LAWN WITH SALT (T. C. J.).**—The salt would no doubt be efficacious in destroying slugs, a dry time being chosen for its application. Defer the operation until spring, and then apply equal proportions of nitrate of soda and salt at the rate of 2 lbs. per rod (30½ square yards). If the ground be heavy or deficient of calcareous matter 4 tons of lime per acre would be a good application, applying it in March.

**TOMATOES NOT SETTING (A Novice).**—We can only account for the fruit not setting from the atmosphere being kept too close and moist, the ventilation not being free enough. The flowers are very puny, and would no doubt come stronger and set more freely if the roots are supplied with weak liquid manure. Leave the ventilators slightly open constantly at the top of the house, and when external circumstances admit ventilate freely. Tomatoes, though they grow and show flower freely, do not set well in a close atmosphere. Keep the plants you have for fruiting at Easter, or if you cannot do that take cuttings from them now; they strike freely in gentle heat. If you raise plants from seed sow at once, and when the plants are up keep them well near the glass, shifting into larger pots as they require it, potting firmly, and instead of using large pots feed the plants with liquid manure.

**WATER LILIES (Puddle).**—When the plants have grown so as to become crowded the flowers are small and not so freely produced as when they have more space. Thin them well out in spring so as to admit of space for the foliage, which will strengthen the plants and induce stronger and freer flowering.

**LILUM AURATUM (Idem).**—It is usual for large bulbs to decrease in size especially if allowed to carry their full crop of flowers the first season. It is much better to select small bulbs, which do not feel the loss of the roots nearly so much as larger bulbs.

**WINTERING TUBEROUS BEGONIAS AND GLOXINIAS (Idem).**—Place the tubers in cocoa-nut refuse a little moist so as to maintain their vitality, or they may be kept in the pots with the soil a little moist but not wet, nor on the other hand dust dry, or the roots are apt to become farinaceous and decay when subjected to heat and moisture. They must be kept safe from frost. Gloxinias should be kept in a temperature of 45° to 50°.

**REMOVING HORSE CHESTNUT (A. R.).**—Remove the soil from around the stem as much as you possibly can, exposing the roots to the fullest extent practicable, and then cut them off as low down as you can, in which case there will not be any or little fear of shoots arising from the roots, as would most likely be the case were the tree felled at the surface.

**ROSE ELECTION (R. J. Clarke).**—In Nos. 893 and 918 you will find the results of the poll of two Rose elections. The numbers can be had from the publisher in return for 3d. each in postage stamps.

**FRUIT TREES FOR GARDEN (W. Ball).**—If you will state whether you require the Pears for growing as standards, bushes, or walls, and the Apples for dessert or culinary purposes or both, we will endeavour to name those that are likely to meet your requirements.

**VINES UNHEALTHY (R. H. T.).**—As the border has been made under the supervision of a competent man it has probably been well drained and formed of suitable compost; assuming that to be the case we can only attribute the unsatisfactory condition of your Vines to overcropping, or to the canes not having been cut back sufficiently when young. If the roots are healthy and yet the laterals weak you would obtain stronger canes by cutting the Vines down to the base of the rafters, shortening the growths that are made after they are matured, leaving only a length of 3 or 4 feet at each winter's pruning. You might cut down a portion of the Vines at a time if you object to being without fruit for a season. Perhaps if a competent man inspected the Vines he could suggest a better means of renovation. The "Vine Manual," published at this office, 3s. 3d. post free, will afford you much useful information.

**NAMES OF FRUITS (G. H.).**—The Pear is Urbanista, the Apple Red Ingestric. The Plum we do not recognise.

**NAMES OF PLANTS (J. C.).**—1, Specimen too withered for identification; 2, *Fuchsia fulgens*; 3, *Chrysanthemum coronarium*. (A. Boyle).—It is a species of *Mesembryanthemum*, and its not flowering is probably due to over-luxuriance. Place the plant in poor soil and keep it dry. (J. G.).—The shrub is *Clethra alnifolia*. (R. S.).—The leaf is that of a *Hoya*, probably *H. carnosa*. (G. P.).—1, *Cassia corymbosa*; 2, *Kerria japonica flore-pleno*; 3, *Lobelia cardinalis*; 4, *Centranthus ruber*; 5, *Resembling Pyrethrum alpinum*; 6, *Aster multiflorus*. (A. Constant Reader).—*Coronilla glauca*. (A. W.).—1, *Chelidanthus elegans*; 2, *Selaginella Kraussiana*.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### NITRATE OF SODA AND ITS USAGE AS A MANURE

(Continued from page 375.)

In continuation of this subject we wish to state that nitrate of soda for many years has been greatly adulterated, often by the addition of common salt, by the vendor. When nitrate is selling at £18 to £14 per ton or upwards it is easy for the manure agent to secure a large profit by the addition of salt, and this when mixed is not easily ascertained except by analysis. We therefore advise the home farmer to purchase by analysis or by a guarantee

of its purity, for it is now commonly sold by the best and most respectable men, guaranteed not to exceed 5 per cent. of refraction—that is to say, in every hundred part of the salts ninety-five parts shall be pure nitrate of soda. The 5 per cent. impurities consist of common salt, and traces of sulphate of soda, magnesia, sand, and moisture. Presuming that nitrate of soda contained 5 per cent. of impurities, we should then have 15·64 per cent. of nitrogen, which is equal to 18·98 per cent. of ammonia. One thing will be noticed, that although the adulteration of the nitrate is effected by the addition of common salt, it is not injurious as the experiments we have given show; but to have the full advantage of both nitrate and common salt we must buy them separately, because the latter will always be "cheap, hence the extraordinary advantage to the manure seller who adds salt to his nitrate.

We must now refer to the soils and climates where the nitrate is likely to prove most valuable. The best soils—that is to say, the most holding and strong loamy land, will give the best return for the application of nitrate whether the soil is cultivated or lying in pasture or meadow, likewise on clovers and field grasses; and the effect on mangolds is good, because it gives so much growth of leaves, and enables the plants to derive a large portion of ammonia from the atmosphere. For the cereals, however, it is extremely important that the land whereon they are grown should be a southern or western aspect, for upon land facing the north or north-east they are much more subject to blight by the unfavourable action of the temperature when the growth has been stimulated by the action of nitrate. Therefore under such circumstances it is imperative when corn is sown where the aspect is unfavourable to use a larger admixture of salt and mineral phosphate manures. It must be observed that the effect of nitrate upon the cereals is to produce a broad flag, which under the circumstances described may be injurious, but in the growth of vegetables and fodder crops it will be just the reverse. It is interesting to know that although in the event of heavy rains, nitrate being so soluble that there must be some loss, yet by experiments and calculations it is found that the rain itself supplies in the course of a year nitrogen equal to a certain quantity of nitrate of soda. It is, however, proved that nitrate acts best in a dry summer with plenty of sunshine; for although it is shown that the loss of nitrogen from the land is very considerable for every inch of rain, which is about 101 tons per acre, yet we have a compensation, particularly in those seasons when thunderstorms prevail by the ammonia, &c., which is conveyed by the rain to plants. Hence we see the fresh vigorous appearance of our crops often perceptible after thunderstorms, and this is more particularly shown in vegetable produce than the cereals, and is due to the small amount of valuable manure the crops have received, in addition to the refreshing effect of the rain.

Experiments of great importance were tried at the Royal Agricultural College farm at Cirencester in 1862, under the auspices of Dr. Augustus Voelcker, with top-dressing upon wheat in a field of land moderately stiff in texture but well drained. One of the chief objects of these experiments was to ascertain in what proportion nitrate of soda is most economically applied as a top-dressing for wheat. For this purpose 1 cwt., 2½ cwt., and 8 cwt. of nitrate respectively were used per acre, in each case mixed with twice its weight of common salt. The result showing that the larger application produced a corresponding increase in corn. For whilst 1 cwt. of nitrate and 2 cwt. of salt gave an increase of 9½ bushels, 1½ cwt. of nitrate and 8 cwt. of salt gave an increase of 12½ bushels of corn, and 2 cwt. of nitrate and 4 cwt. of salt gave an increase of 18½ bushels. Thus for each half hundredweight of nitrate an additional increase of nearly 3 bushels of wheat was obtained. Although these may be the results in a favourable season, yet in a wet season and upon land of a bad or north aspect the chances are that the crop would go down and the corn become blighted. On light land, such as sand and gravel or light chalk, we consider guano is often preferable to nitrate of soda and salt, because guano supplies the phosphates and alkalies as well as nitrogenous matters. Nitrate of soda is efficacious in virtue of its nitrogen alone, and requires the addition of soluble phosphate to

bring out its full advantage. Mr. Lawes, in his experiments upon growing wheat for twenty years in succession upon the same land, found that the largest crops were obtained when mineral and nitrogenous manures were employed together. The average yield of corn during the twenty years in the unmanured portion was 16½ bushels, with farmyard manure it was 32½ bushels, with artificial manure supplying both nitrogen as well as the phosphate and alkalies 35½ bushels, but by using mineral manures alone the average yield of twelve years was only 18 bushels 1½ peck. The field whereon these experiments were carried out at Rothamstead is a somewhat heavy loam with a subsoil of clay resting on chalk. In later experiments Mr. Lawes found by the continuous growth of barley that the results correspond in many respects with those obtained from the growth of wheat. There is no doubt that the increase of straw will follow a full dressing of nitrate; the only thing to be guarded against is the straw being so bulky as to go down, in which case it is sure to injure the sample of corn, more especially of barley, which is so much dependent for its value as malting grain. For oats perhaps no corn gives a better return for nitrate of soda dressings mixed with phosphates and salt.

We know many experiments which could be related of the advantage of nitrate of soda, &c., as a manure for pasture land, but from our own experience we recommend 1½ cwt. of nitrate and 3 cwt. of mineral or bone superphosphate per acre for ordinary grass land, except low-lying meadows where guano would answer best, but upon any dry pastures resting on sand, stonebrash, gravel, or light chalk, 3 cwt. of common salt should be added to the above-named mixture. A very advantageous way of making use of nitrate of soda in our opinion is its application to early fodder crops, such as trifolium, rye, vetches, and such like, which are required for early use. We have seen it advance these crops nearly a fortnight, a matter of the highest importance, especially in a late season. Nitrate may also be used more largely, say 2 cwt. per acre, on fodder crops, because the land is cleared earlier for succeeding crops such as mangolds, Swedes, cabbage, and carrots, and the residue of manure will prove of great value to any crop which may follow. There is, however, a special value in the liberal use of nitrate alone upon Italian rye grass, especially upon chalk hill farms without water meadows, for we can obtain valuable crops of this grass ready for feeding after a mild winter as early as the month of February. After having applied an extra quantity of nitrate for the purpose of forcing on the crop we need not be afraid of its being lost in its effect upon the succeeding crops; for Mr. Lawes found in the growth of barley for twenty years, when he used 275 lbs. of nitrate of soda, and then on another plot he put 550 lbs. and thus gave it a double dressing. What is remarkable the result of this dressing, because in fourteen years after, so far from the nitrate of soda having been exhausted or washed out of the soil, where the larger quantity was used it produced a better crop for fourteen years afterwards than the part where the smaller quantity had been used. We know some land agents who frequently object to the tenants applying nitrate to the land in the last year of the tenancy. The above experiment, however, ought entirely to remove any such feeling, because we know also that although the land may be exhausted to a certain extent of its minerals, we have a ready means of restoring them by mineral and bone superphosphate applications. A good farmer of our acquaintance is in the habit of using nitrate largely for spring corn, but always in admixture with superphosphates and common salt, and usually drills the manure with the seed, believing this the most profitable way of applying these manures, because it improves the corn without making the weeds grow like manures sown broadcast. We have been dealing with a very large question, but have endeavoured to show the home farmer how best to use nitrate of soda having regard to the seasons, soil, situation, and aspect.

#### WORK ON THE HOME FARM.

**Horse Labour.**—This is now going on most effectually, for the dry and dull weather we have experienced in the last week of October and first week of November has enabled the home farmer to sow the land with wheat. However, in consequence of the wet summer the heavy lands are still very close and work badly, yet upon all dry and friable soils the land is now in capital condition to receive the seed. A heavy season is best if the weather only proves favourable for drying the surface after drilling the wheat; on the other hand, should heavy rains succeed and run the land together it will exclude the air, and this year as the seed is very small and imperfectly ripened the young plants will be likely to perish in the land. The work of the farm has been so long delayed by adverse weather that it will be difficult to sow a full complement of wheat before Christmas upon strong land should the weather prove ever so favourable; for the time when wheat-sowing ought to have been proceeding, the winter vetches, winter beans, &c., required to be sown, after having been delayed beyond the usual period. We find on looking over the heavy land farms that it will be quite impossible to sow the usual quantity of wheat, for the fallows intended for that crop never could be made in numerous instances, although steam power has been available at every interval of dry weather. The home farmer must, however, in such

cases change the course of cropping, and allow the unfinished fallows to be again prepared in the spring, and be sown with barley should the spring be favourable for cleaning the land; otherwise the fallow process must be continued and the land seeded to root crops, or a succession of mustard crops, vetches, &c., and be seeded to wheat the following autumn.

**Hand Labour.**—Cutting and plashing hedges will now be commenced, also trimming those which have been neglected from any cause. Border grass or that found in the plantations should be cut, as these materials make capital covering for heaps of mangolds, carrots, &c., which may be required to be preserved during the winter, and almost equal to seaweed. Upon some farms with little straw grown it is important to know that straw may not be required at all, the earth covering being laid on the grass or seaweed being sufficient. Cutting underwood may also be commenced now in the coppices and hedgerows; the materials will always be required on the home farm—first for hurdle wood, engaging to have the hurdles made on the spot at so much per dozen, also spar wood may be selected, taken to the farm, and made up into spars during bad weather in the winter. All the strongest and roughest of the white and black thorns may be reserved, together with stout stakes for making fences, and in certain districts where there are but few live fences this is important. The remaining portion of the underwood will be made up, some into stout faggots and the lightest brushwood into kiln and other bays adapted for placing under corn or hay stacks. Where there is common or rough land upon the estate bearing fern, rushes, &c., these should be cut carefully and kept as bedding, if not required to assist in covering-in the heaps of roots. As bedding for young stock it is valuable, for it not only saves straw, but we have the evidence of Dr. Voelcker that ferns contain valuable substances as addition to the dung heap, particularly when cut in the summer whilst the sap is in the stems. In the localities of commons, forests, &c., where the poor have rights, ferns are much used and approved as bedding for both horses, cattle, and pigs. The cattle men and shepherds will now be engaged in root-feeding the fattening bullocks and sheep. In case of change of food either from turnips to Swedes, or from Swedes or turnips to mangold, it is of the greatest consequence to the health and benefit of the animals that any sudden change of food should be avoided. When going out of one field into another a few cartloads of each kind of roots may be exchanged, so that the animals may eat mixed food before leaving one field and for a short time after entering another. This observation applies to sheep in open field feeding, but it is equally desirable that cattle in the boxes should not be put upon a change of roots suddenly, but have a mixture before going on to feeding of another sort of roots. It should be recollected that any disturbance of the health of the stock results in the loss of so much food, and any check to their health means so much less meat made. Cabbages now are the best food both for young stock as well as the milch cows, and these they may have on the pastures if dry, for there will still be some grass which, together with air and exercise, is favourable for their health. The early-horned ewes will now be lambing, and together they may with the lambs run upon the clover seeds at daytime, but should be taken to the wheat eddishes at night time, as it is much warmer lying for the young lambs, for we have known frequently cases of cramped and crippled lambs when lying on the clover at night time if the weather is frosty, and the lambs never recover.

#### THE MANUFACTURE OF BUTTER.

It has been considered a settled point in England, and more especially in Ireland, that in order to carry on dairy farming it is absolutely essential that all or most part of the land occupied as dairy farms shall be in permanent pasture. In the last number of the "Royal Agricultural Society's Journal" Mr. Jenkins shows that in the dairy districts of the north-west of France only a very small proportion of the land is in permanent grass; and he considers it is "necessary to draw particular attention to this point, because the excellence of the French product has hitherto been attributed chiefly to the alleged superiority of the pastures of Normandy, whereas most of the butter imported into England from France and other foreign countries is made in districts where arable land dairying is the rule, and permanent grass dairying the exception." In the most celebrated dairy departments of Normandy "much less than one-fourth of the whole cultivated land is in permanent grass of all qualities," whilst in other departments the proportion of permanent grass is one-fifth, one-sixth, and even as low as one-tenth.

In 1877 the amount paid for French butter imported into England was £3,654,488, which was rather under the rate of some previous years. It is, however, an enormous sum of money to send out of the country for an article which is actually a staple of home manufacture, but which, from carelessness or other causes, is inferior to that of foreign make. The three and a quarter millions sterling expended in the purchase of fresh butter is just so much lost to the English and Irish dairy farmers, and it is surely worth while to try whether some portion of the golden stream, if not the whole, may not be diverted into home channels

instead of supinely permitting it to enrich other countries. French dairy farmers possess no special advantages as regards rent or wages. The better classes of land rate at 80s. to 50s. a statute acre—equivalent to 48s. to 80s. per Irish acre—and wages of agricultural labourers are from 2s. to 2s. 6d. a day, without food, and from £16 to £20 a year with food, besides lodging in the stable or cowhouse. Mr. Jenkins attributes much of the success of French dairy farmers to the fact that amongst the small farmers two or three of the children, who constitute a large family in France, work together for the common benefit. He says, "To this fact must in some degree be ascribed the success of the French farmers in producing butter, and especially soft kinds of cheese of delicate flavour, and therefore possessing a high market value. Under no other circumstances probably would so much care be bestowed on the making, and such constant supervision in the curing, to say nothing of the delicacy in packing, of these highly susceptible and easily perishable articles of commerce." We have much the same conditions existing in Ireland amongst our small farmers; but, generally speaking, similar results have not been produced as those which Mr. Jenkins describes. There may be reasons for this failure of the principle in the case of Irish small farmers; but we need not enter into that matter at present.

With regard to the production of butter, French dairy farmers all admit that the most scrupulous cleanliness is absolutely essential. The process followed in making the premier butter of France, known as Isigny butter, is as follows:—The cows are milked morning and evening, and in some cases three times a day, into jug-shaped vessels made of copper lined with tin, and holding about two gallons each. The milk is taken to the dairy, and is strained through a sieve lined with clean linen into earthenware buckets. These buckets are placed in a row in the milk-house, and the milk is then set for twelve hours. The cream skimmed after the first twelve hours is not mixed with what is taken off afterwards until immediately before churning, and in some instances butter of exceptional delicacy for Paris is made entirely from the twelve-hours cream. The quality of the butter is deteriorated when the milk stands longer than twelve hours; and although long standing increases the quantity, the price obtained does not compensate for loss of quality.

The cream is churned twice or three times a week in a barrel churn. The churn has fixed dash-boards, which do not extend to the circumference of the churn. The dash-boards are perfectly plain laths, and the churn altogether is a model of simplicity and effectiveness. According to the size of the churn it is furnished with one or two large openings, which are open and shut by one of the usual contrivances employed in other barrel churns. There is also a vent peg placed in or near the head, and intended to be used as a ventilator if necessary, and a spigot placed in the bulge midway between the two large openings of a large churn, or opposite the large opening of a small one. This spigot plays an important part in the process of butter-making.

The churn is about half filled with cream at a temperature of about 57° Fahrenheit, and the best butter makers do not churn at a greater pace than from thirty to forty revolutions per minute, according to the season. As a rule, the butter comes in from twenty to thirty minutes, and the churning listens most attentively so as to detect in an instant the slightest alteration in the sound of the churning cream. An alteration being detected, or even suspected, the churn is at once stopped, in such a position that the spigot is about the level of the cream in the churn. The spigot is then carefully withdrawn, and the adherent matter minutely examined. If this is still cream the churning is renewed and the sound carefully attended to; but if, on the contrary, there are particles of butter on the spigot, no larger even than a pin's head, the churning proper is finished. A quarter of a turn of the handle now brings the spigot to its lowest point nearest the ground, and immediately beneath it is placed a sieve over a vessel to receive the buttermilk. The spigot being then slightly drawn out the buttermilk escapes and filters through the sieve, which retains even the smallest particles of butter which may be carried out by the buttermilk. When most of the buttermilk has thus been withdrawn from the churn, the small quantity of escaped butter is replaced in it, and fresh spring water is also put into the churn until it is half full. Three or four turns are then given, and the mixture of water and buttermilk is again withdrawn as before. This process is repeated often seven or eight times, until the water which comes out of the churn is as bright and clear as it was when put into it. At the end of the process the butter may be seen floating as one mass in a small lake of clear water. When removed from the churn by means of large wooden spoons, the butter requires no more working than is sufficient to consolidate it and express the particles of clear water from its interstices. The butter thus made goes direct to Paris, where the farmer receives for it as much as 2s. and upwards per English pound, according to the season. None of this first-class butter comes to England, and it is actually second-rate French butter, made with less care and skill, which beats the best English and the best Irish butter in the London market. This is a significant and remarkable fact. Mr. Jenkins states as the result of careful inquiry, that, other things being equal, the quality of the butter

depends upon the earlier or later period at which the working in the churn is commenced. This is so far recognised that some French dairy farmers have their churns fitted with a glass window to enable the eye to see and thus assist the ears when the butter first begins to be churned.

Certain operations required in the cure of butter prepared for exportation, such as kneading, working, and salting, are performed by the buyers who purchase the butter from the farmers. Machines have been constructed to facilitate those operations, engravings of which are given by Mr. Jenkins. The best butter destined for exportation to England is not actually salted, but for the final working a strong solution of salt is used in place of pure water. Ordinary butter is salted by the admixture of 8 to 5 per cent of its weight of salt if for consumption in England. French butter of ordinary quality is excellent for immediate consumption, but it will not keep very long without a large quantity of salt, from the battering it undergoes in the process of making up by the merchants. French butter is sent to the London market in kegs holding about 70 lbs. each, in crocks protected by an outside basket, and in boxes containing one dozen 2-lb. rolls. Extreme cleanliness and neatness are characteristic of all the methods, and they are further distinguished by the free and almost lavish use of clean linen linings—(*Irish Farmers' Gazette*.)

### THE POULTRY CLUB.

We are requested to announce that a Committee Meeting of the Poultry Club will be held at the Crystal Palace Hotel on Monday 17th inst., at 5 P.M. The General Meeting will be held in the Palace on Tuesday 18th. As the Club are unable to obtain a suitable room in the Hotel, the Manager of the Crystal Palace has kindly placed the Opera Theatre at their disposal, but for the morning alone, in consequence of which the arrangements for the Meeting have not been finally settled, but a notice of its time and place will be sent to every member. At the General Meeting Miss May Arnold will call attention to matters connected with the late contest of incubators at Hemel Hempstead. The Secretary will propose the addition of a new rule—"The Committee are empowered to disqualify a show; and any member who after due notice of the fact exhibits a show so disqualified shall cease to be a member of the Club, unless the Committee see good reason to the contrary."

### VARIETIES.

We have received a notice to the effect that a meeting will be held at the Crystal Palace on Wednesday, November 19th at 2.30 P.M., with a view to the formation of a Turbit Club, and the discussion of a draft of rules and regulations for governing the same. The Honorary Secretary *pro tem.* is the Rev. T. B. Combe Williams of Sala Villa, Upper Beeding, Hursleypoint. Among the prominent Turbit breeders who have promised to attend are Messrs. T. Coke Burnell, Charles A. Crafer, George Roper, and W. F. Lumley.

**BIRMINGHAM CATTLE SHOW.**—The entries of cattle are 182; sheep, 64; pigs, 62; corn, 29; roots, 176; potatoes, 188; poultry and Pigeons, 2866—total 8472. These figures show a considerable increase on late years, particularly in the cattle and root departments.

—THE Canterbury Show is advertised to be held on December 11th, 12th, and 18th. We observe that after having been thrown open the Show will again be confined to six counties as formerly. We are pleased to see this reaction, as we always favour local shows if their area be not too restricted.

—The Committee of the Shrewsbury Poultry Show, being unable to obtain the use of the Market Hall on December 17th and 18th, have postponed the Exhibition till further notice.

—THE Mid-Surrey Show of poultry, Pigeons, and cage birds will be held at Kingston-on-Thames on December 18th, 19th, and 20th. The schedule is a good one. There are thirty classes for poultry, twenty-two for Pigeons, and eleven for cage birds, besides local classes for poultry and Pigeons.

—POTATOES.—There is no doubt that this season the produce of our own growth of potatoes is turning out a most lamentable one. Happily, however, English money, notwithstanding depression in trade, can replace from foreign countries almost an unlimited quantity at moderate prices. Very large supplies have come and are coming forward from German ports, and what perhaps is still more satisfactory is that the quality is very good. Our Canadian provinces are likewise prepared to ship to almost any extent, but it is a question whether they can compete with the German in price; that they can do so at a free-on-board price there is no doubt, but with such a heavy and low-priced article as the potato freight is a serious consideration. It is satisfactory to find that some of the principal large houses in the foreign fruit trade are taking to them, and call the grocer's attention to the sale of an article of such large consumption. For doing so they are to be commended. It will be satisfactory to the general public in this country to know that, with literally no crop here, yet there

is no failure abroad, and large crops there mean moderate and low prices here.—(*The Greener*.)

### STANDS AND COVERS FOR HIVES.

We are unacquainted with any advantage that aspect may give to an apiary, for we have failed to notice any difference of results from hives facing south, west, north, and east. We have found hives on the north side of a high wall where they were always shaded do as well as those exposed to the sun all day. The position of an apiary so far as aspect goes is in our opinion of no moment whatever. A spot well sheltered from winds at some distance from large sheets of water, and free from noisome smells, is an eligible position for bee stands or bee houses. A sheltered spot for the apiary is an advantage to bees both in winter and summer. In hatching brood they dislike winds, and often close their doors against their chilling influence. Young bees in making their first attempt to fly are easily chilled and brought to the ground. Bees at work in the fields dislike winds, and prefer to go to and from the fields by roundabout routes rather than lose time and risk their lives in battling with the wind. In windy places bees with heavy loads have some difficulty in entering their hives, and in such places both hives and covers need to be well fastened down to prevent their being upset and displaced during gales and gusts of wind.

I have to confess that my prejudice against bee houses becomes less and less every severe winter, for in them hives are more easily protected from cold and rain than they are on common stands. In this cold and changeable climate hives out of doors cannot be too well protected from cold and damp. Bee houses proper—i.e., houses for hives, are in our practice and experience inconvenient in summer when artificial swarming and other manipulating processes are oft resorted to—inconvenient, too, for the examination of hives.

Common stands are made by driving three posts into the ground for every hive, the front a little lower than the other two, so that the rain which falls on the flight boards runs outwards; and here I may state that it is well to have the edges of all floorboards bevelled all round, fronts, sides, and backs, so that all rain and condensed moisture that may touch them will run off.

The height of stands or the distance hives should be off the ground is not a question of great moment. Some bee-keepers perch them high and some perch them low. We think 8 inches above the level of the ground is quite high enough in summer, and perhaps rather too low in winter. As already indicated floorboards should be kept dry, especially in winter, for if a severe frost come and find them full of moisture they become too cold for the bees. Care in keeping hives dry and cozy in winter is, in our opinion, pretty good evidence that the bee-master practically knows what he is about; evidence, too, of past and future success. About four weeks ago I went down to Scotland to see if the thirty hives I left there in July had food enough for the winter. They all required feeding, and as my time was limited I obtained 2½ cwt. of sugar, boiled it into good syrup, which was all given to them in a few days. Each hive received 8 lbs. daily. We used no feeding vessels, simply because we had none. The syrup was poured over the combs from a small watercan without a rose. Throughout the past summer and autumn our bees had above 1200 lbs. of syrup thus poured amongst their combs. When bees are rapidly fed in autumn the heat and moisture of hives increase, and their boards become black with moisture absorbed. At the close of the autumn feeding the bee-keepers of the neighbourhood where my hives are remove the wet boards and put dry ones in their places. This I could not do, for I had no boards in Scotland save those on which the hives are standing; hence our hives were fastened down on damp boards solely from inconvenience, being two hundred miles from home. We failed to carry into practice the common custom of the local bee-keepers. Common stands should be from 4 to 6 feet asunder, so that room enough is left between the hives for covering and examining them. Where few hives are kept and space is of no consideration we would advise them be set further apart.

Covers for hives are necessary at all seasons to give them protection from rain, cold, and sunshine. Good covers cost something, and hence anything handy that will answer at all is often used. Indeed in large apiaries, at least in my own, many things are used for covers that give but scant protection and cannot be recommended. What kind of covers should be used? Waterproof ones: I mean such as will shed off outside both hives and boards all the rain and snow that may fall on them, and at the same time permit all the internal moisture of the hives to pass off and escape. Oiled cloth, waterproof cloth, tarpaulin, and roofing felt do not let the moisture of hives pass through them, and therefore should not be used as undercovers next to the hives. If used next to the hives they would catch and condense the moisture that escapes from the hives and keep their crowns constantly damp, and it is well known that damp hives are a fruitful source of mouldy combs, and the danger is greater if the crowns of hives are wet.

Now let me mention an instance of my forgetfulness. The last

day of my short visit to my bees in Scotland arrived. Almost all the hives were insufficiently covered. I went into an ironmonger's shop and bought some roofing felt at 4½d. a yard, and some better at 7d. a yard. The best kind I used extensively for outside covers for hives—old carpets, old cocoa-nut matting, and old clothes for undercovers. Well, I made the felt bought in Scotland go as far as it could till I came to the last four hives to be covered. About 4 or 5 yards of the best felt only was left. This was cut in four equal pieces, put over the crowns of the four hives, and tied down closely to their sides. In my hurry to have the work done the internal moisture of these four hives (and they are very strong ones) was overlooked and neglected, and this fact so haunted me on my return to England that I wrote a letter to the person in whose garden the hives (with waterproof felt hats) are standing, asking him to raise the felt covers and put some hay or straw beneath them so that the moisture of the hives will escape; also to pierce some holes through the crowns of the covers. Whether he has done this or not I cannot tell, for I have not heard from Scotland since I left it last time. If the hives remain as I left them without ventilating materials under the felt covers their crowns, I venture to assert, are damp with condensed moisture, and many of the combs will mould and rot.

In concluding these remarks shall I be permitted to submit one consideration? If moisture is hurtful on the outside of hives what must it be on the inner surfaces? If the materials of covers should be porous, what should the materials of hives be? If external ventilation is desirable, surely internal ventilation is necessary. This is not the first time that this question has been submitted for the consideration of the intelligent bee-keepers of Great Britain, neither will it be the last time; for amongst the honest active men of the bar-frame school, ever advancing onwards, this important question will with increasing power force itself into notice. In every school of apiculture there is a door left open for improvement.—A. PETTIGREW.

### ARTIFICIAL POLLEN.

MR. CHESHIRE'S discovery of a new method of giving artificial pollen is one of the most important that has been advanced of late years, and the thanks of the whole apian community are due to him for the promulgation of it. If I mistake not it has been published to the English world at a somewhat critical time, for—owing to the lateness of the season throughout the year, which still prevails—we have had as yet no ivy harvest. Last year the ivy blossoms began about us to attract bees at, or soon after, Michaelmas. To-day (November 4th) I have observed my bees carrying ivy pollen for the first time. If cold or wet weather should now set in for any continuance no pollen will have been stored since the middle of September. At present it is mild, and if open warm weather should prevail the ivy will yield a good deal of pollen, if not of honey, during the next fortnight or three weeks. But if not, let all earnest bee-keepers "make a note" of Mr. Cheshire's discovery and act upon it, especially in the early spring.

Very interesting, too, is his discovery of the fact, as to which there seems no reasonable doubt, that full-grown bees eat pollen, and that probably it is an essential item of their daily food. This will help to account for the vast quantities of it which are found stored up in all strong hives in autumn time, and for the very small quantity which is found to survive till spring. The quantity of brood reared during the winter months do not account for this. Some have ridiculed the idea of helping bees with a supply of pollen artificially, on the ground of the useless accumulation of it in hives. The enormous quantity stored up has not been a single ounce too much. The bees know best what they are about, and store in proportion to their numbers and probable requirements.—B. & W.

### THE EFFECT OF FOUL BROOD ON HIVE POPULATION.

I HAVE been asked to state my opinion as to whether external apparent prosperity and strength of population is conclusive evidence of the absence of foul brood. I can only reply, Certainly not, and that the strongest hives of the apiary are the most likely to be attacked, for they have a larger breadth of grubs to give a nidus for the intruding micrococci spores, and that just as the army of foragers increases the possible chances of contagion multiply. As well might be supposed that a city could not possess a large adult population if measles was found raging amongst its infants, or vice versa, state that the large numbers of adults was proof that measles was unknown within it.

When foul brood breaks out it attacks grubs only, and for a fortnight or so no actual difference is affected, but as it spreads population is reduced from two causes: Young bees do not all hatch out, some die prematurely, and the odour generally diffusing itself takes all heart and energy out of the workers; the brood-nest gets by degrees choked, and the laying energy of the queen is thus repressed. The general effect is the gradual weakening



of the colony it is true; but all can see that time is required for the destroyer to accomplish his purpose, and despite his sad work making havoc within, the bees may appear to be in the full swing of unhindered progress until the disease has a firm hold of every comb. No mistake could be more fatal than to conclude that all suspicion of foul brood is to be disregarded, and nothing done of a remedial nature because, forsooth, the population is strong. Making a visit to a Hertfordshire village a few days since I found one apiary of skeps shockingly diseased, so much so that the sickening exhalation was painfully apparent as one passed in front of the hives. The owner remarked, "They have a queerish smell, they don't seem to do at all." How much need there is to teach on this matter!—F. CHESHIRE.

### DO BEES KNOW THEIR KEEPER?

THIS question I have often heard answered in the affirmative, but as it was from very doubtful authorities I now put it to your readers with the hope it will be answered satisfactorily by some of them. I believe that it is a more important point than most people are aware of, and I wonder it has not been mentioned by some of your correspondents when replying to young beginners in bee culture, as much of the successful management of their bees either depends on courage or giving the bees a reasonable time to become acquainted with them. Still, if it be true that bees know their master, how is it then that some people have bees for years and are afraid of them, and indeed in many cases have good cause for being afraid, yet at the same time an experienced bee-keeper can do whatever he likes with them with impunity? Where is the secret? I answer, in experience and courage, as seen in the cases of the keepers of wild animals. It is the courage and determination make them masters over so fierce a charge, while the timid would be hunted away. My employer tells me a story in confirmation of bees knowing their master. He says he heard of a bee-keeper who was very successful with his bees, and that they allowed him all kinds of freedoms with them; but after a while he was struck down with small pox, and when he went back to his bees, having become quite well, they would not recognise him, and he had to beat a speedy retreat.—COMBER.

### FEEDING BEES THIS AUTUMN.

SEVERAL communications have reached me on this subject this autumn, as multitudes of bee-keepers have found out, when almost too late, the utter poverty of their stocks. To all I have given the same answer, "Lose not a day while the mild weather lasts to supply what you can." A word of caution, however, is needed. Not only should the syrup now given be thicker than that given in spring and early autumn, but it should be fortified with a little rum or other spirit—enough to gently stimulate the bees and to act as a preventive against dysentery. A little salicylic acid, as recommended lately in this Journal, will improve the quality of this remedial addition to the bare sugar and water.

I examined several of my hives yesterday, which had remained quite inactive since I left off feeding them nearly two months ago. I was glad to find them well supplied and vigorous, so as to need hardly any assistance. All seemed in good health, with hives dry and clean. I therefore contented myself with giving five of them about a pound of food each, which will save their opening any sealed-up cells on this side the first frost. In recommending feeding on any large scale so late as this it must be understood that I do so only in cases where it is a necessity. As a rule it is certainly bad policy to stimulate bees unduly at this time of year, and a large quantity of syrup in open cells is apt to cause damp in the hive, owing to the unavoidable evaporation which accompanies it.—B. & W.

PRICKLY COMFREY V. RABBITS.—In reply to "E. C. O." and in corroboration of the remarks of "A KITCHEN GARDENER" on the subject, Prickly Comfrey planted by me three years ago in a piece of ground overrun by rabbits has not been touched by them.—G. MILMAN Major-General.

### OUR LETTER BOX.

DEVONSHIRE CREAM (A. B.).—The milk should stand twenty-four hours in the winter, half that time when the weather is very warm. The milk pan is then set on a heated stove, and should remain there until the milk is quite hot; but it must not boil, otherwise there will be a thick skin on the surface. When it is sufficiently done, the undulations on the surface look thick, and small rings appear. The time for scalding cream depends on the size of the pan and the heat of the fire, but the slower it is done the better. The pan should be placed in the dairy when the cream is sufficiently scalded, and skimmed the following day. The cream made in this way is so much esteemed that it is sent to the London markets in small square tins, and always meets with a ready sale.

ROUGH GRASS IN PASTURE (H. B.).—Patches of coarse creeping grass will appear on various soils, and as nothing is said about the soil which is complained of we have no doubt that it is in consequence of the land being deficient in chalk or lime. It must, however, be noted that whenever the pasture is fed off by sheep as well as cattle that the sheep eat the finest and

sweetest herbage, and bite so closely that it destroys the best grasses, and the coarser grass prevails in consequence. As, however, the case under consideration probably arises from the land being out of chalk the sour and coarse grasses prevail over all others. We think the best plan would be to pare the turf about 1½ inch deep next March and burn it, then give it about 20 tons per acre of fine-screened chalk, or about 11 tons of quicklime per acre spread over the surface, then drag-harrow the land and spread the ashes over the surface; then sow a mixture of grasses as follows, the quantity for an acre being as under—

	lbs.		lbs.
Yellow suckling.....	6	Alopecurus pratensis ....	12
Alsike .....	3	Festuca duriuscula .....	12
Permanent white or Dutch clover .....	3	Poa pratensis .....	12
Timothy grass .....	3	Festuca pratensis .....	12
		Pacey's peren'l rye grass..	12
Total heavy seeds ....	15	Total light seeds ....	60

After the grass seeds have been sown for a year or two 1½ cwt. of nitrate of soda should be mixed with 8 cwt. of bone phosphate per acre and applied.

FEEDING BEES (Bury).—You have been feeding your neighbours' bees as well as your own all this time, that is the only way of accounting for so small a quantity of honey being stored. Of course during a continued process of feeding there is a great stimulus given to the breeding of the queen, which in its turn induces a much greater consumption of food; but making all due allowance for this your bees ought to have stowed away at least from 10 to 15 lbs. The truth is you have been a public benefactor, for which your apiaries ought to vote you an address of thanks. Many a half-rusted stock within a radius of two miles has been largely indebted for existence to your kindness in providing an open-air banquet *pro bono publico*. This explains the "extreme liveliness" of the bees and their being "cut in hundreds every fine day." We would advise you to make a shallow box closed all round save at the top, where there should be a large hole; over this place your hive. Let the box have a door or slide at the back, by which you may introduce your "troughs." Feed at night in still warm weather, closing the entrance of the hive except a very small hole big enough for a couple of bees to pass out at a time. Feed till your stock is 10 lbs. heavier than it is at present. It would be advisable to let the hole of the box be near to the side of the hive with an opportunity for the bees to pass up and down continuously without flying, otherwise you may lose many bees in the box owing to their getting chilled while trying to return to the hive. For this reason a round box would be better for a common skep, the diameter of which should be the same.

DESCRIPTION OF HIVE (E. W. E.).—Mr. Hooker's hive will be illustrated and described shortly. We intend giving during the winter a series of hints upon hive construction, embracing the chief improvements that have made their appearance at the shows during the past season.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.						Rain.
1879.	Baromet. at Sea and Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		In sun.	On grass.	
Nov.		Dry.	Wet.			Max.	Min.	Max.	Min.			
		Inches.	deg.			deg.	deg.	deg.	deg.			
We. 5	30.519	44.5	41.9	W.	45.6	52.5	48.4	88.7	41.4	—	—	—
Th. 6	30.589	41.2	39.7	S.W.	44.9	51.1	36.8	74.4	31.1	—	—	—
Fri. 7	30.577	45.6	44.4	N.W.	44.6	54.3	37.7	81.4	30.3	—	—	—
Sat. 8	30.587	43.4	43.0	W.	44.3	48.4	38.0	59.0	30.6	—	—	—
Sun. 9	30.480	49.1	47.3	S.	44.8	50.4	48.8	53.3	48.3	—	—	—
Mo. 10	30.148	46.6	46.5	W.	43.4	51.6	44.6	52.3	46.3	—	—	—
Tu. 11	30.138	43.9	41.7	W.	45.6	47.6	41.6	63.3	37.5	0.75	0.75	0.75
Means.	30.417	44.9	43.5		45.0	50.8	40.6	60.3	38.3	0.85	0.85	0.85

### REMARKS.

5th.—Cool, bright, very fine day, overcast only for short time at noon; starlight evening.

6th.—Fine dry day, overcast at intervals; fine solar halo during the greater part of the forenoon.

7th.—Very fine and bright till 4.30 P.M.; solar halo 2.45 P.M.; misty at 5 P.M.; very dense fog 9 to 12 P.M.

8th.—Foggy and dull all day; clear evening.

9th.—Dull, overcast, dark day; fine evening.

10th.—Dull morning, slight rain 9 A.M.; soon clearing, and much brighter in middle of day, drizzle at 2 P.M.; dull damp afternoon and evening.

11th.—Dull morning, bright after 10 A.M.; sunshine from noon till 2 P.M.; cloudy in afternoon, rain 5.15 P.M. for short time, afterwards bright starlight evening.

Another fine dry week, chiefly noticeable for the high and steady barometer, Nov. 5th to 8th inclusive, and for the fog on the night of the 7th.—G. J. SYMONS.

### COVENT GARDEN MARKET.—NOVEMBER 12.

THE supply of home Apples has been meagre during the week, imported goods completely ruling the market. There is no alteration in hot-house fruit. Trade steady.

### FRUIT.

	s.	d.	s. d.		s.	d.	s. d.
Apples.....	½ sieve	2	6 to 4	Melons.....	each	0	0 to 0
Apricots.....	dozen	0	0 0	Nectarines ..	dozen	0	0 0
Cherries.....	box	0	0 0	Oranges .....	100	4	8 to 9
Chestnuts.....	bushel	12	0 0	Peaches .....	dozen	2	0 0
Figs.....	dozen	0	0 0	Pears, kitchen..	dozen	2	0 0
Filberts.....	½ lb.	0	1 0	dessert .....	dozen	2	0 0
Cobs.....	½ lb.	0	0 1	Pine Apples ..	½ sieve	3	6 to 4
Gooseberries ..	½ sieve	0	0 0	Pine Apples ..	½ lb.	0	0 0
Grapes, hot-house	½ lb.	1	6 0	Raspberries ..	½ lb.	0	0 0
„ Muscats ..	½ lb.	3	0 0	Walnuts .....	bushel	14	0 0
Lemons.....	100	6	0 10	ditto .....	100	0	0 0

## WEEKLY CALENDAR.

Day of Month	Day of Week	NOVEMBER 20-26, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.			
20	TH	Oxford and Shrewsbury Chrysanthemum Shows.	46.7	34.6	41.7	7 39	4 3	0 48	11 24	9	14 16	324				
21	F	Croydon and Ealing ditto.	49.6	36.2	42.9	7 30	4 2	0 59	morn.	7	14 1	325				
22	S		49.3	34.7	41.9	7 32	4 1	1 13	0 37	8	13 45	326				
23	SUN	24 SUNDAY AFTER TRINITY.	47.6	34.2	40.9	7 38	4 0	1 27	1 49	9	13 29	327				
24	M	Camberwell and Sheffield Chrysanthemum Shows.	47.4	31.7	39.5	7 35	3 59	1 48	2 58	10	13 12	328				
25	TU		46.4	33.7	40.0	7 37	3 58	2 0	4 7	11	12 44	329				
26	W	Birmingham and Dartford ditto.	47.3	32.9	40.0	7 38	3 57	2 20	5 16	12	12 35	330				

From observations taken near London during forty-three years, the average day temperature of the week is 48.0°; and its night temperature 34.0°.

## AGAINST HARD PRUNING.

**A**CCORDING to promise I return to the subject so well handled by "A NORTHERN GARDENER" in the Journal for July 31st, and if it appears that I am unpardonably late in doing so, I may say that there is still ample time for carrying out my recommendations, and also that such a formidable opponent, with a huge army of other gardeners great and small behind him, is not to be attacked at a time when one has little or no leisure for digesting the subject in hand. Of course there are many points in the paper alluded to with which I thoroughly agree, and your correspondent will, I know, give me credit for admitting the soundness of his teaching as to the necessity for air and light, and its influence on the future well-being of the trees; the principal part of our disagreement will be about the manner of obtaining the desired ends. And here let me say that I invite no one to take part in this discussion who will not give each side credit for possessing ordinary common sense and a knowledge at least of the rudiments of vegetable physiology. We all like very well to get the best of an argument, but that is not the purpose for which the *Journal of Horticulture* exists. Let us try to bear this in mind, and rather endeavour to grasp each other's meaning than catch at words which do not quite express what we would say.

"A NORTHERN GARDENER" recommends summer pruning, although it is but fair to say he does not go to extremes in this matter as many others do; on the other hand, I prune less and less every year. In short, he is for restriction and I for extension wherever there is a chance of carrying it out. Supposing we take the Apple as being at once the most important fruit and the fruit with which everybody is supposed to be acquainted. Your correspondent writes as if there were no such thing as an orchard of young trees in a bearing state which have not been subjected to summer pruning. I admit that such a thing is far too rare, but whose fault is it? Horticulturists have been writing them down with all their might as long as I can remember reading the papers, and now what have they to supply their places? Will bushes and pyramids do it? No. Whether you go in for beauty, quality, or productiveness, there is nothing that can at all compare with an orchard of young standard trees on the Crab stock. Have to wait a lifetime, would you? Again I say, Whose fault is it? Throw away your pruning knife, and many of the best varieties will produce a crop in half a dozen years such as none of your pigmies can possibly bring to perfection. If you wish the growth of a vigorous tree to be crowded prune it hard, and you will soon have three or four branches in the place of one; on the other hand, if you want it to produce fruit early of the best quality and largest quantity, and to continue to do so for a couple of generations with little or no expense or trouble, do not touch it with the knife, unless in rare cases for the sake of balancing the head of a young tree or cutting out a cross branch. In the latter case the cutting must be supplemented by rubbing off any ill-placed shoots which may follow as a result of the cutting;

but as I maintain there is generally more harm than good done by cutting such trees, the soundest general advice I can give is, Do not cut them at all. Plant healthy young standard trees on good meadow land sufficiently wide apart that they cannot touch each other in a century, stake them securely, protect their stems simply with a piece of wire netting twisted round them, and keep the grass fed down with sheep, or even with cows if you like to put a little more protection round the stems. Do not merely dig a square hole and push the roots in; but if the land is at all heavy take the turf off 1½ inch thick and sufficiently wide that every important root may be spread out horizontally to its full length, then cover carefully, filling up every crevice with the fingers with about 2 inches of fine soil in a dryish state, such as may be found on the surface of any vegetable garden, lay the turf down again and beat as hard as possible. If the land is light and dry, then the trees may be put in a little deeper, but in every case the roots must be spread out flatways, and the stem must not be buried more than an inch deeper than it had been before. Do not dig for the sake of making the soil lay lighter, as all fruit trees prefer the soil to be as hard as a turnpike road, nor for the sake of mixing manure, as when that is necessary it is much better to apply it to the surface. November is the best time for planting. Young trees moved then scarcely receive any check, while those shifted late in spring often do not recover for several years. When the trees commence bearing an occasional dose of half-inch bones (not chemically prepared), say a quarter peck to a tree once in four years spread on the grass over their roots, will greatly assist them.

"A NORTHERN GARDENER" brings forward some evidence to prove that there is a better crop this year on trees which have been subjected to summer pruning than there is on those which have not been so treated; but I have taken some trouble to look into the matter, and find that I could bring forward instances to prove the very opposite; therefore we had better dismiss this part of it with a verdict of not proven, and say that varieties and local influences have something to do with it.

Your correspondent very truly says "there are thousands of so-called pyramid and bush-fruit trees at this moment into the centres of which the light can find no entrance, and leaves and spurs are in semi-darkness." No one can deny that this state of things exists even where we ought to expect to see something better, but we differ about the cause. My opponent says they are pruned too little; I say they have been pruned too much. Pruning affords only temporary relief, like cutting one's corn and still wearing the small shoe which caused it. If the foot had been allowed to expand in a natural manner the corn probably would not have come, but being there it demands the attention of a skilful chiropodist and a cessation of the evil which caused it. In like manner a naturally grown tree will generally acquire the beautiful form which Nature intended it should, and needs no surgical operation; its branches will be so disposed that light can reach its very centre. Why, then, should we give preference to pigmies which only bear fruit by the dozen to good-sized

trees capable of bearing a sack? I know it is said by some that the quality is superior on the small pinched trees, but this I totally deny when both have fair treatment. I care not what the kind of fruit is, you invariably have the best quality while the tree which bears it is enlarging at a moderate rate. Let it be too gross or let it be crippled either by starvation, old age, or by having the fashionable process of horticultural millinery carried to the extreme, and you immediately lose quality.

Standard trees have an advantage too often overlooked in the matter of temperature. Being comparatively out of the reach of radiation they may escape the effects of a slight frost, which would prove fatal to their tender flowers were they nearer the ground; they also dry quicker, and are at times, therefore, less sensitive to frost if it should touch them.—  
WILLIAM TAYLOR.

### NOTES ON THE SPRING FLOWER GARDEN.

THIS portion of flower-garden decoration has risen rapidly and extensively of late years, and in our opinion spring-flowering plants are as beautiful, or more so, than a great many of the plants employed for summer decoration. This year will perhaps be the means of guiding some not to adhere so strictly to the formal system of bedding. We were glad to see some useful hints on perennial plants that stood out so boldly against the drenching rains, and under the most adverse circumstances produced their floral beauty. Many who delight in seeing plants massed together and producing a blaze of colour in summer will doubtless be slow in discarding them for the quiet colours produced amongst perennial plants; yet many good, useful, and striking flowers are amongst them which find no place in many well-kept gardens. We may safely conclude that hardy plants will keep the gardens and grounds gay for a much longer time than the tender summer occupants that overcrowd our houses in spring and look gay for a few weeks at the most, and in unfavourable seasons end in disappointment.

In many places after the summer occupants have been removed the flower beds remain bare all winter, and in spring when early flowers produce a charm and enliven the woods the garden still has a naked and deserted appearance. We may safely say where the present system of flower gardening is carried out the beds present a miserable appearance for eight months out of the twelve, and two out of the remaining four only are they in their beauty in the most favourable of seasons. Daisies, white, red, and pink, are amongst the most gay of spring-flowering plants, yet they are considered common by the majority because they are seen in nearly every cottage garden. They are easy to increase and grow, and it is wonderful how rapidly they multiply under the most unfavourable circumstances. Then there are the *Aubrietias* with their small purple and lilac flowers. We consider *A. græca* the best, although the violet blue *A. Campbelli* and the purple *A. Mooreana* are both good; they are lovely dwarf plants, and produce their blooms in great profusion. They are easily raised from seed sown outside in April, and make good plants ready for planting in autumn. Again, what is better adapted for employing with the above plants than *Pansies* and *Violas*? We need scarcely describe varieties, but *V. cornuta* Perfection flowers too late to be used with the above plants; while *Blue Bell* and *Dickson's Golden Gem* flower profusely. The *Tory* is a useful one, but we are inclined to prefer the *Cliveden* varieties, all of which are profuse bloomers and admirably adapted for the purpose. *Myosotises* are very useful plants, being well suited for the spring flower garden, comprising as they do both tall and dwarf-growing varieties, so that either can be employed according to the size of the other spring plants used. *M. dissitiflora* is very suitable for associating with the plants named both for its floriferous character and dwarf habit. *Primroses* and *Polyanthuses* are beautiful, the former presenting so many shades of colour; they are among the first flowers to open after a cold and dreary winter, yet a few are worth a place in the mixed border. *Arabis alba* and its variegated form are useful spring flowers, suitable for the mixed border, but by no means suitable to be employed with *Daisies*, *Aubrietia*, *Pansies*, &c. They bloom too early, and the *Arabis* would present a seedy appearance before those mentioned each the height of their beauty.

*Limnanthes alba*, *L. Douglasii*, and *L. grandiflora* though late blooming, *Wallflowers* of different varieties, *Alpine Auriculas*, *Alum saxatile* and its variegated form, and many others,

are all plants worth growing for the effect they produce in spring. *Silene compacta* is most desirable for spring beds, especially when it comes in in time to be employed with *Daisies*, &c.; but here it is a little too late for that purpose unless kept in pots in a cold frame during winter and planted out in early spring. The old but useful *Cerastium tomentosum* with its small white flowers is pretty in spring when associated with *Myosotises* and *Pansies* and other spring flowers. Bulbous plants add materially to the adornment of gardens in spring. *Snowdrops* and *Crocuses* though short-lived should not be passed nor despised, because they are two of the first flowers that peep through the ground, and are most anxiously looked for to gladden and remind us of the approach of spring. We have quantities here, especially of the former, planted by the sides of walks and springing from the midst of stones overgrown with moss, which wonderfully assist in showing to advantage their snowy flowers and arrest the attention of visitors when in flower; yet how slow are many in trying to make their gardens gay in spring! No better nor more appropriate place could be chosen for the lovely little *Scillas* and the beautiful *Triteleia uniflora* with its light flowers shaded with blue. This little gem is worth extensively growing for spring gardening. Scarcely need we stay to allude to the beauty and usefulness of *Hyacinths*, *Tulips*, and *Narcissuses*. It is well known they are amongst the most beautiful of flowers, and present when grown in quantity an admirable effect that few plants can equal.

The work of planting in the spring garden should be brought to a close as quickly as possible. It not unfrequently happens, where the beds are occupied with the summer bedders, that an attempt is made to keep them neat until frost cuts them off, and then the fall of the leaf where trees abound make a great amount of labour for a time, and the work in the spring garden is often unavoidably postponed; but be it remembered that those plants that are planted early and obtain hold of the ground before the winter sets in do much more satisfactorily in spring, and are not so liable to be lifted out of the soil and suffer by frost. Last winter was most severe on spring-flowering plants, and unsatisfactory results only were attained except by those who had their plants thoroughly established in early autumn.

In carrying out designs in beds or borders with spring flowers it is well to avoid making the patterns too complicated. The simpler the design the better the effect, especially when the lines are marked out with *Golden Feather*. Few can form an adequate idea of the beauty and the fine effect produced by the combination of spring flowers when grown in quantity, and the aim of the flower gardener has been to arrange only those in the flower garden proper that bloom at the same time, so that no blanks are made and no plants looking seedy while others are only in their beauty. Those that produce flowers early and those that produce them late are much better adapted for the mixed border than for beds which should only contain plants that bloom about the same time, and last about the same time in beauty, and are arranged in harmony to produce the desired effect.—WILLIAM BARDNEY.

### DIGGING, TRENCHING, AND CROPPING.

THE great difference in the management of farms and gardens lies mainly in the depth to which the soil is cultivated, and until the farmers are provided with efficient implements which will turn over the ground to a good depth at a cheap cost there is not much hope of farming being made profitable in face of the foreign competition which yearly increases. Gardeners will have the same competition to contend with by-and-by. The only chance of holding their own must lie in following intelligently the best modes of cultivation at present adopted. One of the surest modes of keeping the soil in a high state of fertility is cultivating it to a good depth on every occasion it may be required to turn it over. Ground that is to be permanently cropped should be turned up at least to the depth of 30 inches, not necessarily bringing the subsoil to the top; but the bottom of the trench can be dug up a spit deep, and dung or other fresh material dug in with very great advantage. The same mode of improving the general garden may be proceeded with where it has been neglected.

We make a point of turning over every piece of ground that we can to the depth of from 18 to 30 inches every year, and really fertile soil has been much improved. Some portions, from the nature of the crops, are trenched every season; other portions remain for two or more years without being trenched,

but provided the ground is in thoroughly good condition that is of little consequence. In trenching I find it of great importance to break up all lumps or clods as they are turned in, the portion left on the surface of the freshly turned ground being left rough. I have found that lumps of soil turned into trenches remain as lumps in many cases till the soil is trenched the succeeding year. In soils such as I have to do with, which require plenty of manure to keep them in a high state of fertility, I consider it of importance to work the manure well through the whole body of soil turned up.

Though our land requires a larger quantity of manure to keep it in a high tone than those having soils naturally fertile, at the same time our supply of manure is limited. For instance, a quarter of the garden at present occupied with growing Broccoli and Brussels Sprouts, with rows of late Peas at wide intervals, was occupied with Winter Spinach, which was cleared off and the other crops planted without any preparation. The Spinach again was sown after Potatoes and Peas. The Potatoes were preceded by Savoys, for which the ground was trenched, so that the amount of labour required when ground is in good heart is not so extraordinary. These Broccoli and Brussels Sprouts will be succeeded by Celery for two seasons intercropped with Peas, Lettuces, Turnips, and Endive. If the soil is considered too poor to carry a crop a surfacing of decayed manure at this season is beneficial. In digging ground it is of importance to have a good large opening to allow of the work being cleanly and effectively proceeded with. It is well to bear in mind that ground well worked at this season is very beneficial to the crops during the heat of summer.—  
R. P. BROTHERSTON.

#### PEARS OR PEACHES.

THE past season has shown pretty conclusively the desirability of substituting Pears for Peaches on the walls of many gardens even as far south as London. In exceptionally favourable situations outdoor Peaches may produce good fruit once in two or three years, but I doubt whether there are many gardens north of London where a really good crop is obtained annually without the aid of glass. My own experience in Essex is entirely against outdoor cultivation of Peaches. When I first took my garden in hand about 160 feet of south wall was covered with scraggy old Peach and Nectarine trees, the produce of which was chiefly remarkable for the stones being the largest part of the fruit. I removed the old trees, renewed the borders, and planted a selection of the best varieties, and after some years' constant attention covered the walls with well-trained young trees; but it was an incessant fight against green fly, blister, and mildew, with the utmost uncertainty of obtaining a crop. With a tithe of the labour, half the space under glass would produce more than double the quantity of superior fruit, and the first expense of the glass covering would not equal the cost of a few years' labour in keeping the outdoor trees clean.

Pears on walls give the least possible trouble; if properly trained they require very little attention, and by planting the best varieties only, fruit will be obtained very superior to what is generally met with, and much better than ordinary Peaches. The trees should be on Quince stocks, and if space is limited may be planted as diagonal cordons 21 inches apart, or trained in a variety of suitable ways according to taste. Pears require special attention as soon as the fruit is ripe enough to be gathered; and the early varieties should be gathered at intervals of a week in order to prolong the supply, looking over each tree and picking half of the most forward fruit, and a week later the remainder.

The early varieties worth a place on the wall are Beurré de l'Assomption, Williams' Bon Chrétien, Souvenir du Congrès, and Madame Trevey, all large fruit of first-rate quality.

For midseason supply the great difficulty is to make a selection from so many that are good, but none of the following could well be left out:—Beurré Superfin, Louise Bonne de Jersey, Duchesse d'Angoulême, Pitmaston Duchess, Thompson's, General Todtleben, and Doyenné du Comice. I have left out Marie Louise, as it is a shy bearer, and ripening at the same time as Thompson's is in on way equal to it.

For late supply from Christmas onwards Winter Nelis stands first, and is followed by Nouvelle Fulvie, Josephine de Malines, and Bergamotte Esperen. Olivier de Serres is also worth a place.

This list may appear too short to some of your readers, but I have purposely named only such varieties as may be generally

relied on. It must be borne in mind that with midseason, and especially late Pears, everything depends on proper keeping and ripening. They must be kept cool, but not too dry, a good wine cellar being the best place, and matured in heat, the moist warmth of a hothouse answering better than a dry cupboard. Perhaps some of your readers will favour us with further information on this point, as it is a most interesting one.—ESSEX.

#### HOYA BELLA.

THIS is commonly and appropriately called the Honey Plant or Wax Flower. The plant is of a semi-scandent, compact, free-flowering habit, producing its waxy white flowers with rosy centres from midsummer till late in the autumn. Small well-grown plants when in flower are very suitable for the dinner table or drawing-room; it is also very effective when grown in wire baskets suspended from the roof of the stove. Plants when large and properly trained to small neat stakes are good for exhibition. Cuttings taken of the half-ripened wood strike freely in a moist gentle bottom heat; when well rooted they should be potted-off singly into 2½ or 3-inch pots, employing a compost of equal parts turfy peat and loam, a little sharp sand, and sufficient small pieces of charcoal to keep the soil open. After potting the plants must be kept close and shaded from bright sunshine for a few days, afterwards stake and tie them into shape, and gradually inure the plants to light airy positions near the glass, syringing them on fine afternoons while making their growth, and keeping up a moist atmosphere. The next shift may be into such size pots as may be deemed necessary, as large plants can be grown in comparatively small pots. Care must be taken at all times not to give them too large a shift, as if overpotted they will turn yellow in the foliage. The plants must not on any occasion be allowed to suffer at the roots by want of water; supplying them once or twice a week with a weak solution of soot water will greatly improve their condition.—JAMES SKYRME.

#### SEASONABLE NOTES—PLANTING FRUIT TREES.

TRENCHING, border-making, tree planting, &c., will render the next month an exceedingly busy one to fruit-growers. Where planting young trees is contemplated it is time to send in orders to nurserymen to insure an early delivery. Amateurs and others not acquainted with the numerous varieties now enumerated in most catalogues may be in doubt which to select. For the guidance of such we subjoin a short descriptive list of those we have proved to be good reliable varieties and adapted for most soils and situations. Deep trenching should precede the planting of all fruit trees with a liberal admixture of good maiden loam, top-dressing with well-decomposed manure.

We will commence our list with Apples, taking them as they come into use. The Keswick Codlin is one of the very best for culinary purposes, and seldom fails in producing a crop. Lord Suffield is a general favourite, and is deserving a place in every garden. For dessert none surpasses Kerry Pippin, Ribston Pippin, and Cox's Orange Pippin succeeds them in the order named; they are first-class in appearance and quality, and good keepers. To these should be added Blenheim Pippin and Waltham Abbey Seedling, which will last in use till the end of February, when the following will continue the supply as long as Apples can be kept. Cockle's Pippin, Dutch Mignonne, Court-Pendu-Plat, and Sturmer Pippin for dessert. For cooking purposes the Herefordshire Pearmain, Dumelow's Seedling, Alfriston, and Northern Greening. Among Pears the following may be entirely depended upon:—The best for early ripening are Williams' Bon Chrétien, Beurré Giffard, Beurré d'Amanli, Doyenné du Comice, Beurré Superfin, Marie Louise, Louise Bonne, and Beurré Bachelier, which will carry the supply up to near Christmas, when Bergamotte Esperen, Glou Morcean, and Josephine de Malines are the only real good varieties for late use known to us. The best Peaches are Early Louise for the first, Royal George, Grosse Mignonne, Dr. Hogg, Alexandra, Bellegarde, Barrington, and Walburton Admirable. Among Nectarines Lord Napier is a most valuable variety, very early; size very large, of fine colour and most exquisite flavour. Stanwick Elruge succeeds this, and of late varieties Pitmaston Orange and Humboldt are the best. Among Apricots none equal Moorpark in quality, but trees of this variety are unfortunately subject to die off branch after branch, therefore we recommend the Peach and Hemskirk, both excellent. As

regards dessert Plums, Green Gage stands first, then come Kirke's, Jefferson, Coe's Golden Drop, Reine Claude de Bayay, and Reine Claude Violette: and for cooking purposes Prince of Wales, Prince Engelbert, Victoria, and Pond's Seedling. The best Cherries for dessert purposes are Black Eagle, Early Black Knight's and Tartarian, and of white kinds Governor Wood, and Elton; while for cooking none surpass the May Duke and Morello. Bush fruit not being so important it is hardly worth while occupying space to give a list.

Excepting with the more experienced cultivators a practice on receiving trees from the nurseries is to reduce the tops considerably. This is a common practice with some growers, but a greater mistake could not possibly be perpetrated. The more branches and foliage a tree is allowed to carry the more roots will it make, and the less chance is there of its producing strong gross shoots; but on the other hand cut it back, and its growth and strength are concentrated in a few buds that start away most strongly in the spring. Healthy trees such as are generally supplied, if planted early will always afford plenty of shoots to choose from without having their tops reduced. We never shorten under any circumstances unless it be the extreme tips not quite ripe or any bruised through packing or carriage, but plant with the branches almost entire and properly laid in and trained. By this treatment they cover more than double the space the first year than they otherwise would and bear in less than half the time, and we are sure that those who may feel disposed to give this system a trial will never resort to the old practice again.—JOHN LLOYD JONES, *The Mount, Congleton*.

#### CHATSWORTH IN OCTOBER.

By whatever route Chatsworth is approached grand scenery surrounds the visitor. If we take the track by which thousands travel—the Midland Railway to Rowsley station, we have only to sit still and admire an apparently passing panorama as diversified as it is beautiful. Now high aloft we look down on the tree tops, and into deep verdant dales and glassy streams; anon we are in a cavernous cutting with rocky sides, down which the water trickles and Ferns luxuriate; and again we are on a steep declivity—looking upwards on the one side to the bold receding hills, and downwards on the other on far-reaching pastoral plains. Such is the picturesque railway route so familiar to many travelling from London to Manchester and Liverpool. From Rowsley a pleasant drive or walk of four miles leads to the Palace of the Peak. Other routes with “grand surroundings” are by coach from Chesterfield or Sheffield. From the last-named town there are two courses, the longer, about fourteen miles, by Froggatt edge being the most varied in its scenery. On a summer or fine autumn day no finer drive can be anticipated than that across the lofty Derbyshire hills. At Froggatt edge appears an abrupt and rugged termination of the range, and the riven weather-worn rocks rise in grotesque weird forms—an example of the grand architecture of Nature which dwarfs the works of man into comparative insignificance. From the rocky heights vast boulders have been hurled with extraordinary force, and for ages have been embedded in the hillside, presenting a scene of grand disorder. The effect of the great disruption is enhanced by contrast with the splendid valley immediately below, where repose dwells and the Derwent pursues its steady serpentine course. Both the roads referred to conduct to the pleasant village of Baslow, to which thousands of tourists wend their way during the summer, where they find ample and excellent accommodation for long or short sojourns, and have ready access to the ducal park, which is close on the confines of the village.

To all, the grandeur and surroundings of the mansion are highly imposing—the woody heights, the green valleys, the water scenes. The pleasure grounds in many respects are unique. The grand Emperor fountain forcing the water 296 feet high; and the lesser satellites enveloped in masses of silvery spray, when viewed with a slanting sunlight and against a deep rich background of foliage, command general admiration. The cascades; the Weeping Willow, a strange startling toy; the arched rockery barred by a gate of stone—a solid block of many tons, but so carefully poised on its central pivot that a child can turn it—these and other features are the chief points of interest to the mere sightseer, but not to the gardener. Chatsworth unquestionably is a grand place, not so boldly imposing as some other historical homes of our old nobility; here the artificial preponderates, and there is even something approaching the incongruous where the majestic fountain rises

from a reservoir in miniature. The novel is certainly blended with the beautiful, and the effect is in a measure startling. But for the gardener to see and be satisfied he must have access to the kitchen garden, to which the public are not admitted except by special order. He must not expect to see anything outwardly imposing there, but he may expect good practice, to see much work well done, to see range after range of glass turned to the best account in producing fruit, flowers, and vegetables of the first quality and in prodigious quantity; to see every inch of space devoted to an useful purpose—no waste, no guesswork, but to see order prevail and a masterly system pursued; in a word he may expect to see first-class gardening, and he will not be disappointed.

With conveniences for every crop, and special houses for every purpose—where the resources are great and the demands limited—no shifting, moving, and scheming—gardening is comparatively easy; but this is not the gardening of Chatsworth. True, the means provided are great, but the wants of a great establishment tax them to the utmost, and it is only by much thought on the part of the chief, judicious planning, a complete mastery of every detail—an instinctive mode of making the best of everything, a quick perception of wants ahead and clear prompt action to meet them, that the gardens can be kept in their present thoroughly satisfactory state and a full supply of the best produce maintained at the time it is wanted.

We entered the gardens by Mr. Speed's residence, such an one that not many gardeners are provided with, and after proving its hospitality had a rapid “run round.” Adjoining the house is a venerable structure, not imposing certainly, but very useful. In this house the original of *Rhododendron Gibsoni* is planted out, a large healthy shrub or tree. Other *Rhododendrons*, huge *Azaleas*, and various other plants are similarly established, and yield in due season a plenitude of valuable cut flowers. From the roof depended the old *Fuchsia corallina* in rich elegant masses, from which armfuls of bright and graceful sprays might be cut if needed. The old house is doomed, but it cannot but be parted with reluctantly, for it shelters many an old valuable specimen, and is in many ways serviceable. Near it is the house devoted to the *Amherstia nobilis*, from which Mr. Speed has established a young plant. Arranged round the stem of the tree was a bright group of fine-foliaged plants, and it was striking to observe how well such plants as *Crotons* had coloured in the heavy shade: this was due, no doubt, to the great heat required by the *Amherstia*. Some of the newer *Crotons*, notably *Lord Derby*, were in splendid condition. Contiguous is the Victoria house with its large circular tank for the accommodation of the royal aquatic. Here we find the first instance of scheming. The family being away ornamentation was made subservient to utility, and round the house were arranged hundreds of plants in preparation for winter, such as *Cinazaras*, *Primulas*, *Solanums*, and many others that it is not needful to mention. The aquatics are doubtless now removed, the tank dried and filled with *Chrysanthemums*. The plants were outside in readiness—plants not formally trained but naturally grown; large sturdy bushes in such exuberant health that the question could not be suppressed, What have you been giving them? “Soot, nothing but soot,” was the reply. That was the stimulant, and it is certain that no other could have answered the purpose better. Probably at the present time few finer displays of *Chrysanthemums* are to be seen in the kingdom than in the Victoria house at Chatsworth.

We pass on, glancing at a trio of houses for Vines in pots, one house accommodating during the summer a sufficient number, which when fruiting occupy the remaining structures, these in the meantime being devoted to other useful purposes; they were then filled with pots of Dwarf Kidney Beans, which would yield a valuable crop, to be followed by Grapes. The Vines had made medium canes, hard as oak, and with bold eyes; in fine condition for fruiting. We now reach the long ranges; there are nine or ten of them, not far short of 100 yards long each. In the first ridge-and-furrow house ever constructed the old Vines are in grand health. They were waning once, but, as has been told by Mr. Pettigrew, lime cured them. By years of manuring, the borders, though rich, were inert. Heavy applications of lime liberated the nutritive gases, which the Vines appropriated, and resumed their vigour, and now produce Grapes of the first quality. They were maturing their wood well, the foliage hanging well and assuming bright autumnal tints—precursors of future crops. The early Vines were ready for pruning; starting, for ensuring a long rest, is



deferred as long as possible, and then the time is made up by extra heat. In this work, early Grape-growing, the ordinary practice of starting with a low temperature, producing a slow and sometimes irregular break, is reversed. The Vines are started at once with a temperature of 80° for a quick break and regular, then the temperature is gradually reduced to the point required for ensuring healthy growth. This mode is found to give the best results, otherwise it would not be continued. Other ranges of Vines in full bearing presented a fine appearance, the crops being excellent and the berries fine. Black Hamburg is the favourite Grape at Chatsworth, and is had in use as early and as late as possible. Muscats are also extensively and admirably grown. The garden being low—that is, in a depression between the hills, and the rainfall considerable—the outside Vine borders are raised above the general level of the garden, and the condition of the Vines prove the practice sound.

The Peach ranges are extensive, and the trees are in superior condition. The soil appears naturally suited for Peach trees, for one of the original trees, which is quite healthy, has a stem apparently about 2 feet in circumference. Younger trees are being constantly lifted and replanted to insure abundance of fibrous roots necessary for bearing crops of fine fruit. Figs are grown largely, and it may be said liberally, for there is no root-restriction nor no pruning. The trees are planted in good soil, and the house being very large they have space to extend. The trellis is about 3 feet from the glass, and the branches are loosely secured to it, and fine crops of very large fruit are produced. Melons are extensively grown, and just when the crops in the houses are over Tomatoes are well established in large pots for taking their places. The Tomatoes are grown on single stems trained obliquely on the walls and trellises, and bear heavily, maintaining a full supply of ripe fruit throughout the winter. A seedling Tomato raised from Criterion, but not at all like it, had fruit 4½ inches in diameter and very firm; it is bright scarlet in colour and very slightly ribbed. Cucumbers are also grown in houses. At the back of one house were a large number of seedling Poinsettias, strong plants for flowering this season. They were the result of a cross between *P. pulcherrima* major and *P. alba*, and some interest is being manifested as to the way in which they will "turn out." There are apparent differences in the growth and foliage of many of the seedlings. It is a little singular that in another nobleman's garden the same cross has been effected, and the plants will flower this year for the first time. Some of Mr. Speed's seedling Dipladenias also merit notice. Lady Egerton (*amabilis* × *Brearleyana*) has large, stout, well-formed flowers, pale peach or hawthorn pink—a delicate and lovely colour. The foliage is very fine and ribbed, and the plant is a strong grower. Thomas Speed has flowers of a deep rose colour faintly suffused with purple, the six petals overlapping and having a pale white border. The trusses are very large, some having ten expanded flowers. Pines are grown in pots plunged in brick pits—a superior sturdy healthy stock. Hundreds of Black Jamaica are grown for affording fruit throughout the winter onwards till June; that variety and Queen being "grown to eat; Charlotte Rothschild and Smooth Cayenne to look at." Successions are also in the same dwarf healthy state. Strawberries are forced by thousands, the pots small and crowns large. James Veitch is a great favourite of Mr. Speed, producing fine crops of large fruit, and Sir Harry is also esteemed for forcing purposes. The soil of the garden is deep and good, and first-class vegetables are grown; but the climate is moist and cold, and this year Scarlet Runners were only commencing bearing in October, and the rows had to be covered with woollen netting to preserve them from the frost, which had already killed the Vegetable Marrows. Of fruits such as the Pear and Apple, crops, owing to the unpropitious climate, can never be relied on.

In the pleasure grounds, near the mansion, which is some distance from the kitchen garden, are some span-roofed houses, plain and unpretentious in appearance, but filled with splendid plants. In one of the orchard houses Vandas are grand, to be seen once and remembered for a lifetime, the finest plants probably in the kingdom. *Coelogyne* are splendid masses; the Chatsworth and Trentham varieties with the well-known species yielding a valuable supply of flowers over a long period. *Sarracenias* are admirably grown, and especially noticeable is a remarkable example of *S. flava maculata*, of great size, and a smaller yet one of the finest specimens to be seen of *S. Mooreana*. Dendrobes were in superb condition, large and with excellent growths; and the pans of Indian Crocuses were

startling by their brilliancy. The effect of five hundred flowers in a mass of *Pleione lagenaria* may be imagined but cannot be adequately described; many of the corms were producing three and four flowers, and a few even five. In the decorative plant house the curious *Ataccia cristata* was flowering freely, the plant being in admirable condition; but the Heath house was the most attractive, not with Heaths, but with the grand terrestrial Orchid *Disa grandiflora*. This plant, so "miffy" in many places, is clearly at home here. The house contains a tank, and round the sides and over this tank the plants are grown; they were quite gorgeous and were seeding freely. In another house the *Amaryllises* were a "sight;" *A. aulica* and hybrids had enormous bulbs and foliage, several of the pots producing half a dozen heads of flowers. Some of Mr. Speed's seedling *Amaryllises* have received high honours, and the race is evidently a valuable one.

A long corridor contiguous to the mansion was attractive by the fine wall and climbing plants. *Camellia reticulata* is a remarkable specimen, and a pod of seed was ripening, the flower having been crossed with a white variety. On the same wall *Rhododendron Edgworthii* has produced a pink flower, the seedpod of which was swelling. The old Fuchsias in this corridor produced a fine effect.

We cross the lawn to the grand conservatory—glancing *en passant* at two royal Oaks, the one planted by Her Majesty some years ago, the other recently by the Prince of Wales, the latter tree being a seedling from the former—and, passing through a wilderness of Ferns, reach the noble building. The Palms and other remarkable permanent specimens are in superior condition, and a side stage contains a fine collection of *Epiphyllums* and *Cactuses*. Many seedlings of the former plants have been raised and were about to flower, and many *Cactuses* have been intercrossed, so that something new may be expected by-and-by. It is not necessary to refer particularly to the Palms, &c., in the borders, nor to the fine baskets of Ferns overhead, nor to the *Musa* avenue, but an Orchid demands notice—a fine plant of *Renanthera coccinea* growing up a birch pole, which has produced sixteen large spikes of flowers, the remnants of which remain on the plant. Last winter the temperature of this great house, well as it is heated, often fell to 40°. Near the conservatory are some handsome specimens of Fisher's Golden Irish Yew; and beds of the fine old *Lobelia cardinalis*, with a groundwork of *Dactylis glomerata variegata*, were both brilliant and chaste. Chatsworth is undoubtedly a grand place, but the best feature of it is the excellent practice of the skilful gardener Mr. Speed.—J. W.

#### SYRIAN GRAPE.

I SEND you a few berries of the Syrian Grape which were cut from a Vine trained on the back wall of one of our vineries. Both my employer (Mr. Jardine) and myself consider this variety when well ripened of better flavour than Lady Downe's Grape. The berries sent have been ripe for the last two months. On the same Vine from which the enclosed berries were taken we cut a bunch which weighed 8 lbs. Taking into consideration this having been grown on the back wall shows what may be done by giving this Grape a good position in front, and allowing it to carry only medium-sized bunches. I have tried it in this way, and have found it to improve both in flavour and size of berry, and all who have partaken of them grown in the manner described have been highly pleased with the flavour.—JAMES DICKSON, *Arkleton*.

[The Grapes are very fine; berries large, oval, and pale yellow, with a firm crackling flesh of good flavour—just as this Grape ought to be, and is when well grown and ripened.—EDS.]

#### A TRIO OF BEAUTIES.

AT page 316, in notice to correspondents, something is said about *Campanula isophylla*. I have a high opinion of this plant, having cultivated it for many years as a hardy border plant, and as a dwarf edging plant for flower garden and other purposes. It is useful for cultivation in pots in early spring for indoor work, and again in autumn, and with care a long succession of bloom may be obtained. It is quite hardy here, and is worthy of more extensive cultivation. My second beauty is also a Bellflower (*Campanula trachelium*), larger in every respect, but of dwarf and compact habit, its flowers being much deeper in colour. It is very effective as an edging border plant, useful for indoor work, and quite hardy; they are not particular as to soil. They thrive in ordinary

garden soil, and are easily increased by division at any time. My third beauty is *Veronica syriaca*, a charming plant, which grows only a few inches high, but is very attractive, its intensely blue and white flowers producing a charming effect. Being an annual it reproduces itself freely from seed, and by successional sowing a fine display may be kept up. It is also well adapted for pot culture. It requires a rich light soil in a moderately dry situation.—SPEEDWELL.

## ROYAL HORTICULTURAL SOCIETY.

NOVEMBER 18TH.

THE meeting on this occasion was an extremely interesting one. The great features of the gathering were the Primulas from Mr. Gilbert of Burghley, the collections of plants from Messrs. Veitch and Bull, the Abutilons and Primulas from the Society's garden at Chiswick, and the numerous excellent collections of vegetables staged in competition for Messrs. Suttons' prizes. Several fine collections of Grapes were also sent, especially those from Mr. Gilbert, Mr. Wood, and Mr. Bell, which are referred to below.

**FRUIT COMMITTEE.**—Henry Webb, Esq., in the chair. Messrs. Wood & Ingram of Huntingdon sent a seedling kitchen Apple of a bright showy colour and brisk flavour. It did not possess any special merit over other varieties in cultivation. Mr. Chester, The Gardens, Conington Castle, sent a seedling Apple called Bellamy's Fillbasket, a medium-sized, round, ribbed, pale yellow Apple, with a soft flesh and mild subacid flavour. It was not considered equal to others already in cultivation. He also sent three varieties of seedling Pears, but as they were all mixed when they arrived the Committee could not distinguish one from the other. Mr. P. Grieve, The Gardens, Culford Hall, sent fine specimens of Lucy Grieve Pear, but the flavour was not equal to those exhibited at former meetings in more favourable years. He also exhibited a seedling Apple which promises well, but the season is so unfavourable to the flavour of fruit that the Committee requested to see it another year. Mr. Wildsmith, gardener to Lord Eversley, Heckfield, exhibited a fine dish of Pittmaston Duchess, excellent in texture, but, like all Pears this season, rather deficient in flavour. The Committee gave a vote of thanks for the exhibition. Mr. George Sage, The Gardens, Ashridge Park, Herts, sent a dish of Vicomtesse Héricart de Thury Strawberry, to which a letter of thanks was awarded; Mr. Wood, The Gardens, Leybourne Grange, Kent, eight baskets of Gros Colman Grapes as they are packed for market, each basket containing about 9 or 10 lbs. weight; they were splendidly coloured, and the flavour was excellent. The Vines on which these were grown were grafted on Madresfield Court Vine, and it was interesting to observe the difference between the fruit thus produced and that which was grown on a Vine of the Gros Colman on its own roots. In the former the berries were quite black and the flesh firm and well flavoured; in the latter the berries were only partially coloured, and the texture of the flesh more loose and inferior in flavour. Mr. Wood exhibited the fruit as he packs it for market. It is put into ornamental baskets, and the bunches are secured round the sides by the base of the stalks so as to prevent them moving, and these ornamental baskets are again placed in hampers large enough to admit them easily. When they arrive at their destination the ornamental basket is merely lifted out and is ready for sale.

Mr. Bell of Alnwick exhibited six handsome bunches of the Alnwick Seedling Grape; they had been ripe for some time and had become shrivelled. The exhibit was commended with a letter of thanks to the exhibitor. Mr. R. Gilbert, The Gardens, Burghley, sent three handsome bunches of Gros Colman Grapes; the berries were large and well coloured; the flesh was very firm, and the flavour very fine. A cultural commendation was awarded. Mr. J. C. Mundell, The Gardens, Moor Park, Rickmansworth, sent two plants in fruit of the "Scotch Bonnet" Capsicum, which is the best of all the Capsicums. Mr. S. Ford, gardener to W. E. Hubbard, Esq., Leonardslee, Horsham, exhibited fifty dishes of Apples and Pears, which were rather small but otherwise good in quality.

Messrs. James Carter & Co. of Holborn sent a dish of Scotch Champion Potato which was cooked and proved excellent in flavour.

**FLORAL COMMITTEE.**—Dr. Denny in the chair. The chief collections arranged in the Committee room were the following, all of considerable merit. Messrs. James Veitch & Sons exhibited several new plants; a first-class certificate being awarded for *Lælia Dnyana superba*, an extremely rich purple variety. *Cattleya farrista superba* and *C. Mastersoni*, both beautiful hybrids, were passed. *Stelia Bruckmulleri* is a dwarf species with spikes of small brownish fringed flowers. Mr. W. Bull sent a large collection of rare plants, comprising many beautiful Orchids, Cycads, Palms, &c. The following were the most noticeable:—*Trichosma suavis*, bearing spikes of small flowers with incurved white sepals and petals, and small labellums marked with yellow in the centre, and streaked with deep crimson; very neat and pretty. *Odontoglossum Rossii majus*, sepals thickly dotted with light chocolate, petals white with a few dots at the base, labellum white;

a good variety. *Sophrontia grandiflora* had five good brilliant coloured flowers. *Oncidium Rogersii* had a spike of large flowers with their characteristic broad yellow labellums. *Cymbidium giganteum* was bearing a spike of five of its peculiar flowers. Many other plants, notably a specimen *Davidsonia pruriens*, were in good condition. A vote of thanks was accorded for the group.

A very large collection of double Primulas, raised by Mr. R. Gilbert of The Gardens, Burghley, was exhibited. Many of these varieties are particularly good, notably such as White Lady, Marchioness of Exeter, and A. F. Barron among the white and bluish varieties, while among the pink forms the best is Lord Beaconsfield. About fifty plants were staged. Messrs. Osborn and Sons, Fulham, have acquired the stock, and will distribute these varieties in the spring of 1880. A vote of thanks was accorded to Mr. Gilbert. Messrs. T. Jackson & Son, Kingston, exhibited two stands of Japanese Chrysanthemums, new varieties. These flowers were in excellent condition, the following being the most noticeable for colour and form:—*La Nympha*, *La Charmeuse*, *M. Crouasse*, *Gloire de Toulouse*, and *Dr. Andiguier*. A vote of thanks was accorded. A large and tasteful group of plants was sent from the Society's garden at Chiswick, comprising a number of varieties of Abutilons, intermixed with Ferns and edged with Selaginellas. A collection of single Primulas was also contributed, comprising some striking varieties, especially among the crimson. First-class certificates were awarded for *P. sinensis Chiswick Red*, flower neat and colour bright; and *Rubra violacea*, a purplish crimson flower with a yellow eye. Messrs. Smith & Larke, florists, Kensington, exhibited several elegant bouquets and wreaths of Chrysanthemums, associated with *Adiantums* and *Bourvardias*. A vote of thanks was accorded. Mr. H. Bennett, Manor Farm Nursery, Stapleford, exhibited two Tea Rose plants in pots, *Madame de St. Joseph* and *Alba Rosea*, bearing a great number of fruits produced by artificial fertilisation. A vote of thanks was accorded.

Mr. J. Roberts, The Gardens, Gunnersbury Park, Acton, was awarded a cultural commendation for a fine specimen of *Odontoglossum Alexandræ* bearing two spikes of ten and twelve flowers each. The flowers were large, with a few large chocolate spots on the sepals. Mr. H. Cannell, Swanley, received a vote of thanks for cut flowers of *Salvia Brantii splendens* and *S. Bethellii* in fine condition, also the rich purple *S. Hoveyi*. Mr. R. Dean of Ealing sent plants of the neat bright *Marigold Meteor*, also a bright yellow hose-in-hose Primrose named *Buttercup*. A vote of thanks was accorded Messrs. Sutton & Sons for a collection of Cyclamens of their improved strain.

## MESSRS. SUTTON & SONS' PRIZES.

The special prizes offered by the Messrs. Sutton & Sons brought together an excellent display of vegetables and extremely close competition. For a collection of twelve distinct kinds, to include Suttons' King of the Cauliflowers, Suttons' Improved Reading Onions, Suttons' Improved Dark Red Beet, and Suttons' Student Parsnip, there were nine competitors, all staging excellent collections. The first prize was awarded to Mr. G. Neal, gardener to P. Southby, Esq., Bampton, Oxford, who in addition to the stipulated dishes staged good *Excelsior* Tomatoes, *James' Intermediate* Carrots, *Snowball* Turnips, *Cardoons*, Suttons' *Matchless* Sprouts, *International* Potatoes, and *Ayton Castle* Leeks. The second prize was awarded to Mr. J. Muir, gardener to R. M. Talbot, Esq., Margam Park, South Wales; and the third to Mr. W. Iggulden, Orsett Hall, Romford, both pressing closely for the first prize, each exhibitor being only one point ahead of the other. Mr. Muir's worst dish was the Celery; his *Vick's Criterion* Tomatoes, *Telegraph* Cucumbers, *Pomeranian* Turnips, and *Brussels* Sprouts were very good. Mr. Iggulden showed good Tomatoes, *Snowflake* Potatoes, Celery, Onions, &c. Mr. Wildsmith's collection included remarkably fine *Brussels* Sprouts.

For twelve tubers of Suttons' *Magnum Bonum* there were sixteen entries, all staging good specimens of this popular variety. Mr. J. Fairweather, Halston, Oswestry, was awarded the first prize; and Mr. J. Richardson, Boston, the second. Five exhibitors competed in the class for Sutton's *Woodstock Kidney* Potato. Mr. Townsend, gardener to P. McKinlay, Esq., Croydon, obtained the premier award; and Mr. H. Harris, gardener to C. J. Eversfield, Esq., Denne Park, Horsham, the second, both staging excellent examples.

P. McKinlay, Esq., exhibited a collection of fifty-seven dishes of Potatoes in his well-known excellent style. Some of the best were *Woodstock Kidney*, *Radstock Beauty*, *Manhattan*, *King of the Earlies*, *Shelbourne*, *International*, *Vicar of Laleham*, *Porter's Excelsior*, *Blanchard*, *Magnum Bonum*, *Trophy*, *Ashleaf*, *Snowflake*, *Lemon Kidney*, and *Beckenham Beauty*. The latter is a seedling of Mr. McKinlay's, of which he thinks very highly as being in every respect excellent. Messrs. Sutton & Sons, Reading, staged a capital collection of Potatoes, fifty-four dishes in all; among them Suttons' *King*, *Porter's Excelsior*, *Advancer*, *Fenn's Bountiful*, *Triumph*, and *Covent Garden Perfection* were very noticeable. In addition to these they also staged good heaps of their *Magnum Bonum*, *Woodstock Kidney*, and *Scotch Champion* Potatoes. Messrs. Carter & Co., High Holborn, staged about a hundred dishes of Potatoes, which included all the best varieties

in commerce. Some of the best were the International, Trophy, Main Crop, Breadfruit, Manhattan. They also staged very fine heaps of Carter's Magnum Bonum Potatoes and Scotch Champion, both well-known disease-resisters, and a collection of Turnips and Swedes comprising about sixty-two varieties, many of them excellent examples.

### MADRESFIELD COURT GRAPE.

So much has been written lately in the Journal about the fruit of Madresfield Court cracking that I should like to give your readers my experience of this Grape. We have only one young Vine of this variety, this being its fourth season of fruiting. Previous to 1878 the fruit had cracked immediately it began to colour. In July of that year, when the fruit had fairly commenced to colour, the cracking commenced as usual. The weather was very fine, and in consequence no fire heat was employed. While trying to think of something that would prevent the further cracking of the Grapes the idea occurred to me that a higher night temperature, combined with an adequate amount of air, might have the desired effect. I at once lit the fire, and maintained a night temperature of from 65° to 70° till the Grapes were ripe, with the result that in the eight bunches on the Vine there were not more than a dozen cracked berries, and I am satisfied there would not have been any at all had I applied the fire heat earlier. This year the same treatment has been attended with the same results, except that there has been no cracking whatever, although, owing to the dull wet season, it has been much more difficult to keep up the required temperature. The Vine in question has its roots outside. In the same house are Muscat Hamburg, Black Hamburg, Muscat of Alexandria, Chasselas Musqué, Lady Downe's, Buckland Sweetwater, Royal Ascot, and Trentham Black, all of which have been highly benefited by the extra heat. A miscellaneous collection of greenhouse plants are grown in the vinery all the year through, yet the Vines are clean and healthy. I think if growers of Madresfield Court would state under what conditions they grow it, it would be a great help in arriving at the real cause of the cracking.—T. R.

### CHRYSANTHEMUM SHOWS.

CHRYSANTHEMUMS in the autumn are as popular as Roses are in summer, and certainly are equally well cultivated. They are also being increasingly grown around London and several large towns, and the shows now being held afford instruction to hundreds of cultivators and gratification to thousands of visitors; the exhibitions therefore merit record, although so far as we have seen the plants and blooms do not equal the high standard of excellence of former years.

#### WALTON-ON-THAMES.

Quite a Chrysanthemum-growing district is that comprising the parishes of Walton, Weybridge, Oatlands, and Hersham—a salubrious and pleasant district too, containing many gentlemen's residences and cherished and well-managed gardens. The Show was this year held at Walton, the new Public Hall being kindly granted for the purpose prior to its formal opening, and probably not till the next Chrysanthemum show will the structure present such a bright and imposing appearance. The large room was crowded in every part with plants and cut blooms, and several specimens had to be placed in a smaller room adjoining. The cut blooms were arranged on both sides of a table down the centre of the building, the raised central part—the dividing line—being occupied with small plants of Chrysanthemums "suitable for the dinner table." Standard plants were placed down the sides of the Hall with Pompons in front of them, the ends being staged for dwarf-trained specimens of the large-flowered section. We do not hesitate saying that the general effect of the Exhibition was spoiled by the miserable "table plants" occupying the prominent position. Had their space been devoted to really useful and well-grown table plants, such as *Dracenas*, *Aralias*, *Palms*, &c., the Hall would have had a much better appearance. Having noticed the little that was bad we will now refer briefly to much that was good.

**Plants.**—The principal prize offered was a silver watch—more useful and valued there than a cup—for six dwarf-trained large-flowered specimens. This prize was well won by Mr. Millican, gardener to H. Cobbett, Esq., with healthy well-furnished specimens about 2 feet high and about 8 feet in diameter, each plant carrying about fifty blooms. The varieties were Wells' Queen, somewhat resembling Christine; Chevalier Damage, fine; Mrs. Forsyth, Mrs. G. Rundle, Abbé Passaglia, and Beethoven. Mr. Russell, gardener to J. W. Wilson, Esq., Oatlands, was second with immense and well-trained examples 6 feet across, each bearing about a hundred small half-developed flowers; the plants, not the blooms, won this position. Mr. Cornhill was third with plants very fine in foliage and blooms, but the bent stems were too visible to merit higher

approval. Mr. Polley, gardener to H. Rogers, Esq., and Mr. Reynolds, gardener to Mrs. Allen, staged collections highly worthy of commendation. Mr. Burns, gardener to H. A. Rigg, Esq., won the premier prize for the best single specimen with a fine example of Mrs. Dixon 5 feet across with sixty blooms.

Standards, as they always are at Walton, were remarkably fine, yet not quite equal to the best of last year. Mr. Millican was again in the premier position with Mrs. Dixon, Mrs. G. Rundle, George Glenny, and Prince of Wales, having stems of 8 feet or more, and beautifully formed and not too closely tied heads about 2½ feet across. Mr. Plowman, gardener to J. J. Wilkes, Esq., Oatlands, staged three splendid plants and a "waster," the last-named losing him the first prize. He was second, and Mr. Cornhill third with the finest blooms and foliage of all, but the tying was too close and apparent. With certain little failings all the plants in this class reflected much cultural skill. A special prize offered by the President of the Society (H. Corbett, Esq.) for the best two grafted standards, "the colours to be arranged in circles round the hood," brought out two competitors, both of whom showed very clever handiwork. Mr. Plowman was first with rather round cone-shaped heads, with well-defined concentric colours of yellow, white, pink, and a central white flower. Mr. Millican was second with larger flat heads, the yellow margin being very close but the other rings less perfect. These novelties attracted considerable attention. Pompons were not nearly so good as last year, many flowers not being half expanded. Only the specimen plants of Mr. Polley, who was first with *Cedo Nulli*, and Mr. Millican were really good.

**Cut Blooms.**—For twenty-four incurred blooms Mr. Reynolds was an easy winner, his stand containing several good, but some small blooms. Mr. Masters, gardener to F. Day, Esq., was second by one point, and Mr. Burns third. The best stand of twelve blooms in the Show was the one staged by Mr. Burns, winning Mr. Rigg's special prize. The varieties were Golden Beverly, Fingal, White Venus, Caractacus, Baron Benst, Empress Eugénie, Mrs. Dixon, Hero of Stoke Newington, Mrs. G. Rundle, Lady Hardinge, Faust, and Pink Perfection; they were not large but very chaste. Other good blooms in the classes were Mr. Brunlees, Empress of India, Golden Queen, George Glenny, Mr. Corbay, Prince Alfred, Cherub, Eve, Mr. Hall, Lady Slade, and Gloria Mundi.

Mr. Plowman easily won the first position for twenty-four Japanese blooms, Mr. Burns being second by one point, and Mr. Masters third; and for twelve blooms Mr. Reynolds secured the first position. The best varieties, and attractive they were, were Fulgore, the finest Japanese bloom in the Show; Diamond, Elaine, Gloire de Toulouse, Bismarck, La Nympe, a charming pink variety; Garnet, Fair Maid of Guernsey, The Cossack, Fulton, James Salter, Yellow Dragon, Bronze Dragon, Mr. Biggs, Nuit d'Hiver, fine reddish orange; Peter the Great, Ethel, and Gauntlet.

Charming stands of Pompons were exhibited. The conditions were three blooms to form a truss, not necessarily on one stem—the best mode of exhibiting Pompons we have yet seen, especially when elevated about 8 inches above the stand, thus showing the foliage. Mr. Russell had the first prize with undoubtedly the best flowers, but "squatted" close down on the board. Mr. Masters was second (we should have placed him first), with good flowers and fresh foliage, a charming stand; and Mr. Cornhill third, very attractive. The best varieties were Mr. Astie, White and Rose Trevenna, Sparkler, Mdle. Marthe, President, Model of Perfection, Duruffet, Aurora, Mrs. Hutt, J. Forsyth, Bob, and Fanny. Equally attractive were the Anemone Pompons, which the growers of the district excel in producing. Mr. Masters was deservedly first, closely followed, however, by Messrs. Cornhill and Russell. The most attractive flowers were Madame Montels, Marie Stuart, Stella, Miss Nightingale, Antonius, Aglaia, Astrea, Dick Turpin, and Calliope.

Bouquets and floral ornaments were all overcrowded, Mr. Millican's exhibits being less so than the others, and he was hence the chief prizetaker. The principal prize in the ladies' class was easily won by Mrs. Cobbett with a tasteful arrangement of flowers and Ferns.

An extra prize was granted to Mr. Sloper, gardener to J. Wooderspoon, Esq., for a small group of plants of Empress of India and Princess of Wales—the finest blooms in the Show; and a very large and fine collection of dried flowers and Ferns, admirably preserved and mounted on cards by W. Power, Esq., Walton, contributed greatly to the interest of the Exhibition.

Mr. Masters continues to discharge with great efficiency the duties of Secretary, the Committee also working with zeal and in unity; the excellence of the Show and all arrangements connected therewith were the gratifying results of their forethought and labour.

#### BRIXTON AND STREATHAM.

The twentieth annual autumn Exhibition of this vigorous well-managed Society was held on the 18th and 14th inst. in the lecture hall behind the Congregational Church, Brixton Hill, and in the number and excellence of the exhibits it proved very successful, although there was a slight falling off in the Chrysanthemum entries. The schedule enumerated thirty-eight

classes, nearly half the number being devoted to Chrysanthemums, and the remainder provided for the exhibition of miscellaneous plants, fruit, and vegetables, all of which were well represented, the prizes ranging in value from 80s. down to 2s. 6d. Chrysanthemums formed the principal feature of the Show, and many excellent collections were staged both of plants and cut flowers. Among the former the most noteworthy was the collection of six specimen large-flowered varieties from Mr. W. Hall, Secretary to the Society, and gardener to W. Stevens, Esq., Tulse Hill, for which the premier prize in the class was most deservedly awarded. The plants were even in size, the flowers fine and well formed; the varieties—Mrs. Dixon, Mr. George Glenny, Mrs. G. Rundle, and Faust—being in superb condition. Mr. E. Cherry, gardener to Mrs. Slee, Leigham Court Road, was second in the class with very neat plants, Mrs. George Rundle bearing upwards of fifty fine blooms. Mr. J. Howes, gardener to F. Bennett, Esq., Tulse Hill, followed with good plants, but rather small flowers. The Pompon varieties were generally rather sparsely flowered, but the premier collections of six, staged by Mr. J. Howes and Mr. E. Cherry (pyramids), included several good specimens, the varieties Calliope, White Cedo Nulli, Mdle. Marthe, and Brilliant being well represented. These two exhibitors were also placed in the same order with three large-flowered specimens, and Mr. W. Hall obtained the chief prize for the best single specimen of any variety with an extremely well-flowered Mdle. Marthe.

The classes for cut blooms were mostly well filled, and the flowers fine. The premier prize for twenty-four incurved blooms was secured by Mr. A. Holmes, gardener to A. B. Hill, Esq., Olapham Park, his collection including remarkably even handsome flowers, the best being Lady Talfourd, Aurea Multiflora, Queen of England, Mrs. Haliburton, Mrs. Dixon, and Empress of India. Mr. J. Holmes, gardener to G. Storey, Esq., Nightingale Lane, staged the best twelve incurved flowers, Prince Alfred, White Venus, Mr. George Glenny, Mrs. Dixon, Prince of Wales, and Bronze Jardin des Plantes being extremely well formed. Mr. G. Ottaway, gardener to F. Hepburn, Esq., Clapham Common, was a close second. The last-named exhibitor was first with six incurved blooms, a very creditable collection in all points, including handsome flowers of St. Patrick, Queen of England, Beverley, Golden Beverley, and Prince Alfred. This was by far the best in the class. The competition in the maiden class of twelve distinct incurved varieties was very good, for six highly meritorious collections were staged. Mr. A. Holmes obtained the chief place of honour with exceedingly handsome flowers. Mr. George Glenny, Mrs. George Rundle, and Mrs. Dixon were superb; Mrs. Haliburton, the Rev. J. Dix, and Venus were also very good. Mr. E. Cherry, and Mr. J. Davy, gardener to Mrs. Drew, Streatham, followed in the order named with well formed but smaller flowers. Of Japanese varieties only two exhibitors appeared—viz., Mr. J. Howes and Mr. W. Horsham, gardener to J. Kempster, Esq., Clapham Common, who were placed second and third respectively with twelve distinct varieties. Those in the premier stand were very good; the varieties—Gloire de Toulouse, James Salter, Bismarck, The Coesack, Garnet, and Abdul Kadir—being in uncommonly fine condition. Mr. J. Howes exhibited some good Anemone blooms, and was first both with Pompon and large-flowered varieties. There was a good display of miscellaneous plants, including fine-foliage plants, Ferns, Orchids, and Primulas.

In the classes for fruit Apples and Pears were by far the most numerous, about twenty-four dishes of Pears and thirty-six of Apples being staged, of fair quality generally but rather small. The chief prizes for Apples went to Messrs. Holliday, Sandy, and Cooks; for Pears to Mr. Hall and the two last-named exhibitors. Grapes were not numerous, and the best were the premier three bunches of Black Grapes (Alicante) from Mr. Clarke, gardener to J. Baines, Esq., Nightingale Lane, Balham, which were well finished; and a collection not in competition from Messrs. J. Peed & Sons, Roupell Park, including good bunches of Gros Colman, Gros Guillaume, and Alicante. Vegetables were extremely well shown and some large collections were exhibited, especially in the class for any number of kinds not more than two varieties of each; Mr. J. Swain, gardener to Mrs. Wilson, Lower Tulse Hill, gaining the chief prize with an enormous collection of nearly thirty kinds, many of which were represented by two varieties, all indicating excellent culture; Messrs. Emery and Wright following with good but smaller collections. For a collection of eight varieties Messrs. Holmes, Davy, and Young took honours in the order named with clean well-grown specimens. The arrangement of the exhibits was all that could be desired, and Mr. W. Hall deserves great credit for the satisfactory manner in which the Society's affairs are conducted.

#### STOKE NEWINGTON.

For more than a quarter of a century has this, the oldest of the metropolitan Chrysanthemum societies, held its annual exhibitions, and the number and merit of the collections at its last meeting on the 18th and 14th inst. prove that the members have by no means relinquished the culture of their favourite flower. That the number and quality of the exhibits should equal those of more favourable years could scarcely be expected, yet the effects of the

season were only apparent in the plants, for the cut blooms were remarkably good in all the classes devoted to them. The principal class for plants was that in which a silver cup value five guineas was offered for the best ten specimens (large-flowered and Pompons) in 114-inch pots, the second prize being £2 10s., and the third £1 10s. The cup was obtained by Mr. Monk, gardener to H. Head, Esq., Stamford Hill, with well-flowered specimens, of which the following were the best—Prince of Wales, Mrs. George Rundle, Golden George Glenny, Mrs. Hutt, Lord Derby, Mdle. Marthe, and Venus. Mr. Balaam, Pine Nursery, received the second prize for well-trained and fairly flowered plants. The same exhibitor was first with six large-flowered varieties; but although the plants were good the flowers were rather small, except in Lady Talfourd and Barbara, which were the best. Mr. G. Langdon, gardener to Drs. Munro and Adams, exhibited the best collection of four standards in this section, the varieties being Prince of Wales, Mrs. G. Rundle, Golden George Glenny, and Rifleman; Mr. G. Glibbey following with slightly inferior specimens. The Pompon varieties were rather poor generally, but Mr. Marks' premier collection of six were good even plants, including President and Cedo Nulli in fine condition. The first-prize collection of four standards from Mr. Wells, gardener to N. A. Smee, Esq., Woodbury Down, was also good and neat, Antonius, Cedo Nulli, the Lilac Cedo Nulli, and Fanny being well represented. The prize offered for the best single specimen was awarded to Mr. J. Langdon for a well-flowered George Glenny.

The cut blooms were, as we have already intimated, extremely good, the incurved varieties being the most numerous, the Anemone and Japanese varieties being only represented by a few collections, but those were of exceptional merit. In the local nurserymen's and gardeners' class for twenty-four blooms Mr. E. Hammond, gardener to F. Hunt, Esq., York Lodge, Stamford Hill, was placed first with a stand of excellent and even blooms, those of finest form being Queen of England, Prince Alfred, Golden Empress of India, White Venus, White Beverley, Golden Beverley, and Barbara. Mr. H. Butcher's premier twelve were also of considerable merit, Refulgence and Prince Alfred being particularly noticeable for their substance and form.

In the open class for twenty-four blooms, distinct varieties, Mr. J. Clark, Roehampton Lane, was first, and also awarded the five-guinea silver cup for the best twenty-four blooms in the Show. His collection was an extremely handsome one in every respect, many of the blooms being as near perfection as possible; the varieties Novelty, Alfred Salter, Venus, White Venus, and Beverley were superb. Mr. Monk was a close and good second in this class, and an excellent first with twelve and six blooms, being followed in both the latter classes by Mr. Clark. S. J. Godwin, Esq., of Clapton exhibited a highly meritorious collection of Anemone varieties in the class for twelve distinct varieties, but as the collection contained duplicates he was disqualified, yet it would have been well had the Judges recognised the merit of the exhibit by an extra prize. Only one collection of Japanese varieties was staged—viz., twelve from Mr. W. Monk, for which the premier prize was awarded. This was an exceptionally beautiful stand, the blooms being of extraordinary size, deep clear colours, and good substance. The most striking were Tarantula, Fair Maid of Guernsey, Gloire de Toulouse, James Salter, La Coquette, and Elaine. A few classes were provided for miscellaneous plants, but the entries were not very numerous. All the necessary arrangements were well and tastefully carried out by Mr. William Goldsmith, the Secretary. It is, however, to be regretted that the Society is not more liberally supported.

#### RICHMOND.

The first Chrysanthemum Exhibition of the Richmond Horticultural Society was held on Tuesday and Wednesday last in the assembly rooms of the Castle Hotel, and proved extremely successful in every respect. The number of exhibits was very large, Chrysanthemums, of course, forming the chief feature, but miscellaneous plants, fruits, and vegetables were all well represented. In regard to the Chrysanthemums the Pompon varieties were rather indifferently shown, but several remarkably good specimen incurved varieties were exhibited. Of the flowers also the incurved section was by far the best represented, but the Japanese were shown in fine condition in several collections. The principal class was that devoted to collections of Chrysanthemums in pots, to be arranged in a space not exceeding 50 square feet. Mr. G. King, gardener to R. Few, Esq., Esher, was placed first with a well-arranged group, the quality of the flowers being very good. Mr. J. James, gardener to F. Watson, Esq., Redles, Isleworth, was second also with a good group; but the flowers, though well formed, were rather small; Mr. J. Barry, gardener to H. C. Searne, Esq., Radnor House, Twickenham, being third with a well-arranged group. A bronze medal was awarded in this class to Mr. J. D. Kendall, gardener to D. B. Chapman, Esq., Devonshire House, Roehampton, for a good collection, but somewhat irregular; and Mr. Bond, gardener to Mrs. Beckford, Orford House, Ham, obtained a similar award. There were seven entries in this class, the general quality of the exhibits being pretty even. In the class for six trained large-flowered specimens Mr. G. King occupied the premier position with a good collection, but containing one

or two faulty plants. The best were Mrs. G. Rundle, bearing over one hundred blooms; and Mr. J. Glenn, of nearly equal excellence.

Mr. G. King exhibited the best single specimen large-flowered variety, a fine example of Mrs. Dixon with over a hundred well-formed flowers. For six trained Pompons Mr. James secured the chief prize with neat, well trained, and well-flowered specimens of Fanny, St. Michael, and Jane Darley among others. Mr. W. Whittaker, gardener to S. Williams, Esq., The Laurels, Putney, was second with rather small irregular plants. Cut blooms were well represented, those noted below being very good. In the class for eighteen distinct incurved varieties Mr. J. C. Holmes, gardener to G. M. Story, Esq., Nightingale Lodge, Balham, was first with very even and regular blooms, Beverley, Venus, Mrs. Dixon, Mrs. Cobay, and Barbara being well represented. Mr. Reynolds, gardener to Mrs. Alfred, St. George's Road, Weybridge, was second with rather irregular flowers. There were four entries, but the other collections were rather poor. The competition in the class for twelve incurved varieties was good, for no less than nine collections were staged. Mr. G. King held the premier position with handsome flowers. Mr. W. R. Strong, gardener to D. Reid, Esq., Virginia Water, followed, but many of his blooms were rather past their best. Mr. J. Plowman, gardener to J. S. Wickes, Esq., Swiss Cottage, Otlands Park, was third, and an extra prize was awarded to Mr. J. McPherson, Surbiton. Mr. Kendall was first with twelve Anemone varieties, Queen Margaret and Gluck being well shown. Mr. J. Plowman staged twelve good reflexed flowers and was placed first, Triomphe du Nord being one of his best blooms. In the Japanese varieties Mr. W. Strong was first with a collection of twenty-four extremely good blooms, some of the best being Triomphe du Nord, Elaine, Bouquet Fait, M. Ardene, Red Dragon, and James Salter. Mr. G. King was an excellent second, Gloire de Toulouse, La Nymph, Bismarck, and Fair Maid of Guernsey being good.

In the class for miscellaneous exhibits Mr. F. B. Kinghorn, Sheen Nurseries, Richmond, obtained a large silver medal for a group of Chrysanthemums, Palms, and fine-foliage plants. Mr. W. Bowell, gardener to Sir H. W. Parker, Stawell House, Richmond, was awarded a silver gilt medal for a similar group; and Mr. Bates, gardener to J. A. Meek, Esq., Twickenham, secured a silver medal for a large group. Messrs. Charles Lee & Son, Hammersmith, staged a fine collection of nearly a hundred blooms, including all the best large-flowered varieties. Messrs. J. Jackson and Son, Kingston, also sent a collection of Chrysanthemum flowers; Messrs. Hooper & Co., Covent Garden, a collection of Chrysanthemum blooms and Cyclamens, and they also were awarded the first prize for six table plants in a class of eighteen competitors.

Several good fruit collections were staged. Mr. J. Davenport, Riverside, Twickenham, was first with two good bunches of black Grapes well finished. Mr. B. Morrell, The Cedars, Richmond, second with Black Alicante, also well finished. Apples were well shown by Mr. G. King, Mr. W. Fanning, The Convent, Roehampton, and Mr. C. Bond. Pears were also numerous. Mr. J. Hudson, Gunnersbury House, Acton, and Mr. W. Fanning taking the chief prizes. For a collection of fruits Mr. Bates was first with excellent Gros Colman and Muscat of Alexandria Grapes, a good Pine Apple, and Pears. Vegetables were not numerous, but good. Mr. B. Morrell and Mr. J. Hudson secured the chief prizes.

During the afternoon of the first day a large and fashionable company assembled, thus giving the Society good support in the opening Chrysanthemum Exhibition.

#### LIVERPOOL.

The autumn Show of the Horticultural Society of Liverpool was held in St. George's Hall on the 18th and 19th inst. Chrysanthemums were not so numerous as on previous occasions; yet, considering the disadvantages growers have had to contend with, they were shown in good condition. The first-prize cut blooms were of immense size and very good, but did not possess that high finish possessed by those of last year. Some of the principal growers did not exhibit cut blooms. In the class for six large-flowering varieties Mr. G. Hughes, gardener to R. G. Nolan, Esq., was first with good plants of Prince Alfred (very fine), Mrs. G. Rundle, Barbara, George Glenn, Mrs. Dixon, and Venus. Mr. Hughes was also first in the class for three plants with Mrs. Dixon (fine), Lord Derby, and Mrs. G. Rundle. For a single large-flowering specimen Mr. Whitfield, gardener to Mr. Crossfield, was first with a fine plant of George Glenn. In the class for six Pompons Mr. Whitfield was first with well-grown specimens. Mr. Finnigan was first for three plants, also for a single specimen with White Cedo Nulli. In the class for a standard Chrysanthemum Mr. Green was first, and Mr. Rose, gardener to J. C. Read, Esq., second. The six specimens shown by Mr. Tunnington not for competition were really grand, most profusely covered with fine and even-sized blooms, and the foliage good. They were by far the finest standards in the Show. The varieties were Mrs. George Rundle, George Glenn, and Mrs. Dixon shown in pairs, and certainly these plants reflected much credit on the cultivator.

In the class for cut blooms twelve varieties J. W. Cropper, Esq., Dingle Bank, was first. The blooms were very large, and comprised

Empress of India, Prince Alfred, Bronze Jardin des Plantes, Beauty, Novelty (fine), Queen of England, Prince of Wales, Alfred Salter, Lady St. Clair, Jardin des Plantes, and John Salter. Mr. Wilson, gardener to J. E. Reynolds, Esq., was second with much smaller blooms but neat; third Mr. J. Peers, gardener to R. Raynor, Esq. In the class for eighteen cut blooms Mr. Cropper was again first with very fine blooms of Plenipo, Novelty, John Salter, Empress of India, Bronze Jardin des Plantes, Prince of Wales, Prince Alfred, Queen of England, Mr. Cobay, Golden Empress of India, Lady St. Clair, Alfred Salter, Little Pet, Jardin des Plantes, and Sir Stafford Carey. Mr. Mease, gardener to C. W. Newman, Esq., was second with fine blooms, yet compact and of good depth of petal, and contained that solidity requisite for good flowers. Miscellaneous plants and fruit were also exhibited, the collections being generally very good; but the pressure on our columns precludes a detailed report of this section of a very good Show.

#### BOROUGH OF HACKNEY.

This Society held its annual Chrysanthemum Exhibition in the Royal Aquarium, Westminster, numerous and good collections of both plants and flowers being exhibited; but, as has been the rule this season, the general quality of the flowers was above that of the plants, although there were several exceptionally good collections of specimen large-flowered varieties. Our notes are necessarily brief, for the awards of the Judges were only made a few hours before we went to press, but the prizetakers in some of the principal classes are given below. No less than eight silver cups were offered in different classes, and the competition was generally close. The system adopted of affixing the awards to the winning collections was unfortunately one of the worst we have witnessed this year.

Plants were not quite so numerous as usual, but of fair quality. The silver cup offered by the Royal Aquarium Society for the best group of Chrysanthemums was obtained by Messrs. Dixon & Co., Hackney, the group including good plants but thickly placed. Mr. J. Balaam, Vine Nursery, Clapton, was placed second with a rather poor group. The cup of similar value for six standards was obtained by Mr. W. Brett, The Cranmers, Mitcham, with extremely fine specimens, well trained and flowered. The Cossack and Elaine were exceptionally even and beautiful. There were several other collections, but owing to the delay in affixing the prize cards we could not ascertain the awards.

In the cut flowers one of the principal open classes was that for twenty-four incurved blooms, the first prize being a silver cup valued at £5. There were seven competitors, all staging good even collections; Barbara, Prince of Wales, White Beverley, and Mrs. Dixon being well represented in all. C. Lunderson, Esq., Willesden, was first with handsome blooms. Mr. G. Fanning, Roehampton Lane, was a good second. Of the six collections of twenty-four incurved varieties the best was that from Mr. G. Langdon, gardener to Drs. Munro and Adam, Clapton, who was placed first with a handsome collection of flowers, Golden George Glenn, Venus, Barbara, Prince Alfred, and Refulgence being remarkably good. The second (Mr. C. Gattrell, Hackney) and third (Mr. J. Williams, Stoke Newington) collections were also of more than ordinary merit. For twelve incurved varieties Mr. G. Langdon was first; Mr. Gilby, gardener to B. Booth, Esq., Clapton, was second; and Mr. Gattrell third. All good; nine entries. Classes 13, 14, and 15—for twenty-four, twelve, and six incurved blooms—were confined to amateurs residing in the boroughs of Hackney and Finsbury. The flowers were rather small, but well formed. The principal prizes went to Mr. G. Godwin, Clapton; Mr. H. Vinny, Stoke Newington; and Mr. J. Broughton, Stoke Newington. In the class for twelve incurved varieties there were nine entries, the blooms generally being well formed. Mr. C. Gibson, The Gardens, Morden Park, Mitcham, being first; Mr. E. Bury, Roehampton, second; and Mr. R. Whitely, Southwark, third.

There was only one entry of twelve large Anemone blooms from Mr. E. Bury; a very good one, including Princess Louise, Prince of Anemones, and Gluck in fine form. Four collections of twelve Pompon Anemones appeared, the chief prize going to Mr. W. Brett, The Gardens, Cranmers, Mitcham, for very neat flowers. Seven good collections were staged of twelve Japanese flowers, not less than six varieties, the most noticeable flowers being Magnum Bonum, M. Crousse, Garnet, Elaine, and La Nymph. Mr. W. Brett was first, and Mr. J. Lyne, The Gardens, Wimbledon, second. For the special prize silver cup offered by the Society for twelve Japanese varieties three very fair collections were staged. Mr. C. Harding, The Gardens, Bristol House, Putney, occupied the premier position. Messrs. Dixon & Sons of Hackney offered a special prize of a silver cup for the best collection of twenty-four Japanese blooms, not less than twelve varieties nor more than three blooms of each variety. Four competitors appeared, all staging remarkably handsome flowers. Mr. C. Beckett, Moore Place, Esher, Surrey, was awarded the cup; Mr. J. Lyne receiving an extra prize.

Among miscellaneous exhibitors were Mr. B. S. Williams of Upper Holloway, who sent groups of Palms and fine-foliage plants; Messrs. T. Jackson & Sons, Kingston, who had a good stand of Japanese blooms; Messrs. Hooper & Sons, a collection of



dried Grasses; and Mr. H. Cannell, Swanley, who had a collection of Zonal Pelargonium flowers.

#### AZALEA MRS. CARMICHAEL.

THIS remarkably handsome and useful Azalea is one of the distinct and attractive varieties which resulted from Mr. Carmichael's successful experiments in intercrossing Flag of Truce, Stella, and amœna. All the forms thus obtained have a very

marked character, and unquestionably surpass their parents in decorative value, and in this respect are well deserving of attention. The influence of amœna is clearly evident in the foliage and general habit, there being, however, a slight advance upon the species in vigour and freedom of growth; but we think that the flowers, although possessing certain amœna characters, approach somewhat more closely to the indica varieties. The combination of a compact yet vigorous habit with freedom and brilliancy of flowers render the plants both beau-



Fig. 41.—AZALEA MRS. CARMICHAEL.

tiful and useful. As is well seen in the cut, the flowers are of medium size and produced in large compact globular heads, the colour being of an intense magenta-crimson tinge not easy to describe. The plants are admirably adapted for decorative purposes throughout winter and early spring, and if slightly assisted by heat may be had in excellent condition from the present month onwards. The neat form and bright colour of the flowers also render them of considerable value for bouquets, &c. The merit of the variety figured was recognised some time since at one of the Royal Botanic Society's exhibitions by the award of a first-class certificate. Mr. B. S. Williams of Upper Holloway (to whom we are indebted for the annexed

engraving), possesses the stock of these Carmichael varieties, about six or seven of which have been sent out and certificated. Another very fine variety in this section is Duke of Connaught, for which Mr. B. S. Williams received a first-class certificate at the Royal Horticultural Society's meeting on March 27th of this year. It is likely to become a great favourite owing to its very brilliant colour—bright crimson scarlet.

#### TROPÆOLUM SPECIOSUM.

THE beautiful little Tropæolum speciosum has not only flowered here this autumn but has ripened its seed, a pretty

dark blue berry. On opening this berry I find only a hard kernel inside. I want to sow the seed, and would like to know if this kernel is to be sown whole, or are there seeds inside it? I have only about half a dozen and have not broken any yet, but they seem quite solid and not as if they contained any seed. I believe this is the only place in this part of the world where this *Tropeolum* has flowered. I have tried it in various aspects, and the only place it has shown a flower is against a bow window facing the east. It flowers abundantly on the west coast of Scotland, and it is strange it has not hitherto flowered in a western aspect in Ireland. However, the N.W. gales from the Atlantic are our greatest enemy here.—*AMATEUR, Sligo.*

I HAVE never grown this *Tropeolum* from seed. We generally succeed in getting more plants than we require growing up from the roots; they are springing up in all directions, even in the hard gravel walks. I think it would grow freely enough from seed if sown in some light compost with a little bottom heat. The seed is covered with a pretty dark blue skin, and should be sown as it is gathered. This beautiful climber delights in a humid atmosphere, hence the reason why we succeed in growing it so well in this locality. In the south I would recommend growing it on a wall with a north aspect or in some shady part of the shrubbery or plantation. I have seen it very pretty growing up the limbs of bare shrubs.—*JAMES DICKSON, Arkleton, N.B.*

#### WOOD LILIES (TRILLIUM).

THESE beautiful hardy plants have received their common appellation because of their love of shady places, and the fact that in their native homes they reveal a great preference for woody or shady spots, growing amongst long grass, low shrubs, and other places where they receive shade and plenty of moisture. Their generic name is also very significant, as it means triple, in allusion to the foliar and floral organs, although the arrangement of the latter is one of the primary distinguishing marks, not only of the family to which the Wood Lilies belong, but also of the great division of plants in which the family is included. But in the genus *Trillium* we have the true calycine and coralline parts of the flower represented, which is by no means very common in monocotyledons—i.e., as far as the colour distinguishes them; for while the three inner divisions of the perianth are otherwise coloured than green, the outer three are green. But we have here to remark upon their merits as hardy plants, and as such they are exceedingly attractive, especially *T. grandiflorum*. They succeed well if planted in damp shady situations, which is a fact that should favour their much-extended cultivation. Growing with Ferns, in association with *Cypripedium spectabile* and numerous other plants, they add another charm to that part of the outdoor garden. The soil they best thrive in is peat, loam, leaf soil, and sand; but if such is not to hand that need not be an obstacle in the way of cultivating them, as they do well in ordinary garden soil, but do not like heavy soils. They are very suitable for growing in pots, more especially the one mentioned above, which is a charming plant for pot culture and the decoration of the conservatory or cool greenhouse. It forces well, and so it may be had in bloom very early in the season.

There have been about seventeen species of Wood Lilies described, although all have not been introduced. Some of those which have been introduced are now lost to cultivation in this country, but as that part of America in which they are found is now well explored for hardy bulbous and other plants it is probable we may soon have them again. Those enumerated below are most likely to be easily obtained, and are the best.

*T. atropurpureum* (*T. erectum*).—Widely distributed over North America, growing about 6 or 9 inches high. Flowers deep brownish purple, slightly drooping, expanding in April and May. Introduced 1759.

*T. erythrocarpum* (*T. pictum*).—A beautiful species, also widely distributed over North America, producing white flowers curiously splashed with reddish purple, rendering it at once distinct. Flowers in May and June. Introduced 1811.

*T. grandiflorum*.—This is the most charming species known to us; it grows from 9 to 18 inches high, producing large Lily-like white flowers, which last a considerable time. Flowers in June and July. Introduced 1799.

*T. pendulum*.—A very distinct species, producing greenish white flowers of a good size in April and May. Introduced 1805.

*T. petiolatum*.—This is a pretty little species growing about 9 inches high, producing large reddish purple flowers, quite sessile in the rather large cordate leaves. Flowers in April and May. Introduced 1811.—*T.*

#### GRAND DUKE PLUM.

SINCE this Plum was referred to on pp. 380 and 382 we have received fruits of it, one of which is represented in the annexed engraving. The fruit is oval, with a short neck and a well-defined suture, which is deep at the stalk, and frequently so at the apex, where it is sometimes higher on one side than the other. Skin dark, almost a blackish purple, but reddish where shaded, and covered with blue bloom. Stalk 1 to 1½ inch long, very slender, and inserted in a round narrow cavity. Flesh greenish yellow, adhering closely to the stone, very brisk, with a sweet and rich flavour when fully ripe. Stone with a very shallow and narrow chancel, like a thread. Leaves large and glossy. Young shoots smooth.

To Mr. Rivers of Sawbridgeworth we are indebted for this welcome addition to our late Plums. As has been previously

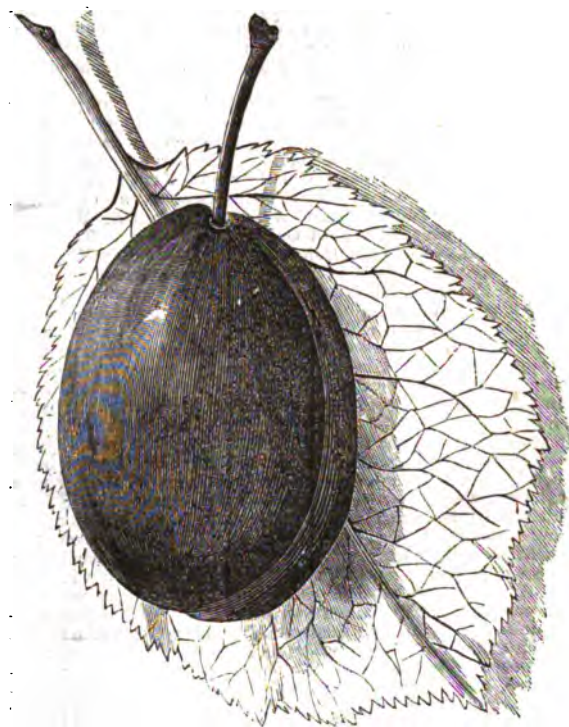


Fig. 42.—Grand Duke Plum.

mentioned it is a seedling from Autumn Compôte, and promises to prove a valuable acquisition. Besides being decidedly late (the fruit figured was gathered in November) it is of excellent quality, and the tree is one of the best growers of all Plums. This feature is strikingly displayed in Mr. Bunyard's nursery at Maidstone, where all the best varieties are cultivated and excellently grown; but the rows of Grand Duke are the finest of all. In the Sawbridgeworth Nursery are many handsome pyramids in a bearing state. For this form of culture it is clearly well adapted. It will make a fine wall Plum, and of a wall it is worthy, and will form excellent espaliers. Grand Duke is likely to prove a Plum of real usefulness, and in all probability it will be largely grown.

#### RIVINA HUMILIS.

AN old plant, by no means rare, and as generally seen it is not deserving much attention, but young dwarf plants when well grown are not surpassed by any other berried plants as an effective table ornament. Its foliage is comparatively small, but sufficient to set off the depending racemes of brilliant coral bead-like berries so profusely produced, the plants exhibiting at the same time racemes of white flowers, and it may



be had in season throughout the year by having plants in different stages of development.

The best plants are obtained from seeds. The seeds germinate in a few days if sown in light soil and placed in gentle heat, and when the seedlings are large enough pot them off singly in small pots, keeping them near to the glass, and shifting into larger pots when necessary. Pots 4 to 6 inches in diameter are sufficiently large. It must be kept as near the glass as possible, so as to render it sturdy, for if grown at a distance from the glass the growth is weak and attenuated. It succeeds in light turfy loam. Plants raised from seed sown in April and grown on through the summer in pits or frames will be in berry by early autumn, and if afforded a light airy position in a cool stove or intermediate house they will be useful for the greater part of the dull season. It is injured by a high temperature, not only being drawn, but the berries are not so enduring.—G. ABBEY.

### FRUIT SHOW AT THE SOUTHPORT WINTER GARDENS.

THE second annual Fruit Show was held in the conservatory on the 13th and 14th inst. It was thought by many that the Exhibition this year owing to the cold season would be only a poor one, but it proved upon the whole very meritorious, numerous splendid dishes being exhibited. All classes were open, hence the firm competition.

For twelve dishes of fruit, Pines excluded, Mr. Upjohn, gardener to the Earl of Ellesmere, and Mr. Hannagan, gardener to R. C. Naylor, Esq., were equal first. The former collection contained fine examples of Gros Colman and Black Hamburgh Grapes; Marie Louise, Doyenné Boussoch, and Doyenné du Comice Pears, splendid in size and colour; Maréchal de Cour was also very fine. Apples were Fair Maid, Court of Wick, and Parkell Seedling, and the collection included a good Queen Emma Melon. The latter staged good dishes of Gros Colman, Black Hamburgh, Muscat of Alexandria, and Madresfield Court Grapes, with splendid examples of Beurré Clairgeau, Maréchal de Cour, Beurré Diel, and Flemish Beauty Pears; Apples, King of the Pippins, Ribston Pippin, and Golden Reinette, with a fine well-finished fruit of Conqueror of Europe Melon. In the collection of six varieties Mr. Hannagan was again first; Mr. Hurst, gardener to B. Bowering, Esq., was a close second; and Mr. Hatton, gardener to S. Swire, Esq., third.

In the class for six varieties of dessert Apples many splendid dishes were staged. First honours were deservedly secured by Mr. Gardener, gardener to E. Phillips Shirley, Esq., with highly coloured fruit of Lord Duncan, Wyken Pippin, Fearn's Pippin, Adams' Pearmain, Mannington Pearmain, and Ribston Pippin. Mr. Lowndes, gardener to S. S. Parker, Esq., was second, and Mr. Whitfield, gardener to T. Cross, Esq., third. In the class for three dishes of dessert Apples, distinct varieties, Mr. Lowndes was first with Ribston Pippin, King of the Pippins, and Blenheim Pippin. For a single dish of ripe fruit Mr. Whitfield was first with very good Ribstons. For six dishes of kitchen Apples there was very keen competition. Mr. Hannagan was an easy first with fine examples of Warner's King, Emperor Alexander, Greenup's Pippin, Alfriston, Lord Suffield, and Mère de Ménage. Mr. Gardener was a good second with Golden Noble, Cox's Pomona, New Hawthornden, Warner's King, Yorkshire Greening, and Winter Nonesuch; Mr. Whitfield being a close third. In the class for three dishes Mr. Whitfield was first with American Mammoth, Nelson's Glory, and Lord Suffield. For the best single dish Mr. Gardener was first with Warner's King.

In the class for six varieties of dessert Pears, Mr. Hannagan won the premier prize with wonderful specimens of Beurré Clairgeau, Duchesse d'Angoulême, Doyenné du Comice, Beurré Diel, Marie Louise, and Maréchal de Cour. Mr. Gardener was a good second, and Mr. Lowndes third. For the best dish of ripe fruit Mr. John Smith was first with Marie Louise.

The Grape classes were well filled. In the class for two bunches of Muscats Mr. Hatton was first with two splendid well-finished bunches, Mr. Hannagan second, and Mr. Hall, gardener to J. Whittaker, Esq., third. For two bunches of Black Hamburgh the first prize went to Mr. Halewood, Hesketh Park, Southport; second to Mr. J. Phythian, gardener to Mrs. Robinson; and third to Mr. Holder. For one bunch of Muscat Mr. Hurst was first with a very fine well-finished bunch weighing 5 lbs. For one bunch of Black Hamburgh Mr. Holder was first. In the class for one bunch of any variety Mr. Upjohn was placed first with that very coarse variety called Meredith's Child of Hale. In the class for one bunch, any other Black variety than Hamburgh, first Mr. Upjohn with a grand example of Gros Colman; second Mr. Jamieson, gardener to the Earl of Crawford, with Black Alicante.

In the Pine Apple class there were some noble examples staged. The first prize went to Mr. Hatton for a splendid fruit of Smooth Cayenne; second to Mr. Jamieson for the same variety; and third to Mr. Upjohn for a fine Prince Arthur.

To Mr. Campbell, the Curator, we tender our congratulations for

the able manner in which he carried out the Exhibition arrangements, unaided as he was by any Committee. The Judges were Mr. Shaw of Bowden, Manchester; and Mr. Mackellar, Abney Hall, Manchester.

### NOTES AND GLEANINGS.

THE following are the arrangements decided upon for the Meetings, Shows, &c., of the ROYAL HORTICULTURAL SOCIETY for the year 1880:—Fruit and Floral Committees Tuesdays, January 13th; February 10th; March 9th, 23rd; April 13th, 27th; May 11th, 25th; June 8th, 22nd; July 13th, 27th; August 10th, 24th; September 14th; October 12th; November 16th; December 14th; Whit-Monday Show, May 16th; Great Summer Show, June 8th, 9th, 10th, 11th; Artisans' and Cottagers' Show, August 2nd (Bank Holiday); Conversazione, Wednesday, May 26th: Evening Fête, July 21st. The date of the Rose Show and Exhibition of the Pelargonium Society will be announced hereafter.

THE rather smart VISITATION OF FROST that occurred in the metropolitan district on the nights of Thursday, Friday, and Saturday last will be of considerable value to nurserymen in accelerating the fall of the leaf in the case of young fruit trees. In consequence of the early and prolonged frost of last winter but little planting could be done, and the orders for trees are correspondingly large this year—orders that in the interests of purchasers it would have been unwise to have executed so long as the trees remained green and the foliage fresh. The frost departed as suddenly as it came, and the weather remains dry and the temperature mild, and planting of fruit and other trees should now be prosecuted with energy. In some gardens around London the thermometer fell to 16° during the frost, and skating was indulged in in Battersea Park and on Clapham Common, where the water was not deep.

WE are informed that Sir FRANCIS TRUSCOTT, the new Lord Mayor, has offered a valuable prize to be competed for at the International Potato Exhibition of 1880.

A MEETING was recently held in Glasgow, at which there was a large attendance of nurserymen, gardeners, and amateurs, when it was decided on the motion of Baillie Cameron to form a WEST OF SCOTLAND PANSY SOCIETY, for promoting the cultivation and exhibition of Pansies. It was also agreed that, to render the exhibition attractive, a few classes of Roses, Pinks, &c., should be added. A representative Committee representing about forty towns and villages was formed, out of which was chosen the executive Committee of Directors. The Hon. William Collins, Lord Provost of Glasgow, has accepted the post of Hon. President. The leading nurserymen making Pansies a speciality have intimated their intentions to give prizes, and the Society starts into existence with every prospect of success. We append a list of office bearers. The President of the Society is Baillie Goodwin, Kirkintilloch; Treasurer, Mr. McIntosh, Dennistown, Glasgow; Secretary, Mr. McCrorie, Kilbarchan; Directors, Messrs. Paul & Archie, Dunearn, Paisley; Thomas Hogg, Cathcart; Storrie & Sutherland, Lenzie; Cameron & Malcolm, Kirkintilloch; Duncan of Trocchar; Gibson, Kilsyth; Stewart, Lennoxton; Law, Springburn; McMillan, Haghill; and Borrowman, Glasgow.

WE have received two letters relative to the specimen plants at the WALTON CHRYSANTHEMUM SHOW. One correspondent remarks on the great superiority of the first-prize collection of six dwarf trained specimens, and observes that the second-prize plants though fine, were "not in flower at all, and they ought to have been placed third." The other refers to the general inferiority of the first-prize six and the "beautifully developed blooms" of the second-prize group, which "ought to have been placed first." So much for fancy and diversity of opinion. A report of the Show will be found in another column.

AT the residence of the Misses Christy, Coombe Bank, Kingston, we recently saw an exceedingly fine display of CHRYSANTHEMUMS which it is generally known Mr. Moorman grows remarkably well. The collection is a large one, and includes a great proportion of Japanese varieties, and we doubt if finer flowers of some of the varieties could be seen elsewhere. Several new varieties recently sent out by M. Lemoine are well represented. For instance, Fleur Parfait, which is of dwarf habit about 2 feet high, bearing large, full, handsome pinkish flowers; a grand variety. Bouquet Fait is a beautiful flower of a most delicate tint; but M. Arden is the giant of its race, for the flowers are nearly 9 inches in diameter and about 4 inches high in the centre, of pyramidal form, and a

fine pinkish hue: it is an improvement on Sultan. Among other Japanese in superb form were Kri Kang, Elaine, Gloire de Toulouse, Garnet, Fair Maid of Guernsey, Cossack, and the profusely flowering La Nymph. The incurved varieties were also in excellent condition, and in one or two instances it was difficult to imagine how the flowers could be improved, for though perfection may be unattainable they were certainly very near to it. Such well-known and generally appreciated varieties as Mrs. Dixon, Mr. G. Glenn, Mrs. George Rundle, Beverley, and Golden Beverley were bearing numerous handsome flowers. Mr. Bunn was also in good form: this is an improvement on Golden Beverley, the flower being neater and rather deeper in colour, and it deserves to be very extensively cultivated. Many other varieties are equally well grown, including some of the Anemone varieties.

In the stove at Holly Lodge, Highgate, the residence of the Baroness Burdett Coutts, we noted on a recent visit an extremely fine *PASSIFLORA PRINCEPS*, which was trained up the rafters of the house and flowering most profusely. This handsome plant can scarcely be excelled as a stove climber, for the long pendulous racemes of bright scarlet flowers are freely produced throughout the summer and autumn months. Mr. Willard, the excellent gardener, who has had charge of this garden for many years, finds this Passion Flower of great service in affording a supply of flowers for cutting.

THE collections of vegetables from Lord Lismore's, Shanbally Castle, and Mrs. Malcomson, Minella House, the first and second prizewinners at the CLONMEL SHOW, were very large, and reflected much credit on the cultural skill of the respective head gardeners, Messrs. Wilsner and Crehan. The Chicory, Cardoons, Mushrooms, Beet, and garden Turnips of the former were as remarkable as the handsome variegated garnishing Brussels Sprouts, Cauliflower, Grove's Red Beet, and Prickly Spinach of the latter. Perhaps of greater interest to the crowds of visitors were the fruit collections of Lord Lismore, Mrs. Malcomson, and Mrs. Bianconi, who obtained prizes in the order named. As a rule half a dozen of each kind of Pears and Apples were shown, while Mr. Wilsner showed remarkably large bunches of Lady Downe's Grapes. Particularly remarkable was the fruit from Lord Lismore's, Catillac Pears and Lord Suffield Apples, while not less noticeable were Mr. Crehan's fruit. Great objects of attraction were the table decorations sent by Mrs. R. Bagwell and Dr. Hemphill; so good were they that no reference here would do them justice. —W. J. M.

THE annual dinner given by MESSRS. SUTTON AND SONS of Reading to their EMPLOYEES, took place on the 13th inst., when nearly three hundred sat down to a well-appointed repast in the large packing room of the seed establishment. The several tables were presided over by the heads of departments, and at the principal table were Messrs. M. H. Sutton, A. Sutton, M. J. Sutton, A. W. Sutton, and Herbert Sutton. Mr. M. H. Sutton, the senior partner of the firm, gave the guests a generous welcome, and delivered an appropriate address. Mr. Alfred Sutton also addressed the assembly. The speakers were highly applauded for the sound counsel and important advice tendered to the audience. At the conclusion of the repast the company, joined by their wives and friends, numbering upwards of six hundred persons, proceeded to the large farm-seed order room, a part of which had been divided off into a concert hall, where an admirable entertainment was given by *employés* of the firm, assisted by Mr. James Freeman, who presided at the pianoforte.

## WORK FOR THE WEEK.

### FRUIT HOUSES.

*Vines*.—Clearing off the foliage from late Vines will remove one of the great causes of damp. Do not, however, remove the foliage before it is mature. The inside borders should be covered with straw or mats, which will prevent the soil from cracking. Outside borders should have been covered with protective material, and shutters or lights to throw off the wet. Fires will be necessary to maintain an equable temperature, 50° not being exceeded, taking advantage of fine days to admit air freely. Look over the Grapes frequently for decayed berries, as when decay affects a single berry it soon spreads to others unless promptly removed. Vines from which the Grapes have been cut should be pruned without delay, or if the foliage be off and Grapes still hanging the bunches should be cut with a good portion of wood attached, as they keep quite as well in a dry room with the shoots inverted in bottles of water, a piece of charcoal being placed in each. In pruning cut back the shoots to plump rounded eyes upon firm ripe

wood, leaving about two eyes upon the spur system, which will afford very serviceable bunches, but if large bunches are required a few of the shoots may be left a few eyes longer. Those upon the extension system should be pruned to firm wood and plump eyes. If the top soil of the borders has not been removed down to the roots whilst the Vines were in leaf it must now be done, taking the inert top soil clear away, and dressing with good turfy loam to which may be added a twentieth each of crushed bones and wood ashes or charcoal, not covering the roots deeper than 3 or 4 inches. Beyond removing the loose bark there should not be any attempt at peeling and scraping, which does more harm than good; and a thorough washing with tepid water and a hard brush will destroy more insects than a pigment of clay and other substances, which neutralise the effect of an insecticide. If they are clean a dressing is not needed, for a good washing with water, or at most soapy water will be all that is necessary. The houses if not required for plants may be left open day and night, but the roof lights may be closed when the nights are likely to be frosty. The houses at the time of pruning the Vines should have a thorough cleaning, limewashing the walls and painting the woodwork if necessary. Frequently turn over fermenting material and replenish with fresh from the stables. Vines in pots and the earliest started Vines will be showing signs of vitality, and may have a slight increase of temperature, increasing at the same time the supply of atmospheric moisture. Very little ventilation will be necessary for some time, but air should be admitted at 65°, closing at that temperature.

*Peaches and Nectarines*.—If the trees in the earliest house have been started they must not lack water in the inside borders, and if there exist any doubt about this after examination water thoroughly with water slightly in advance of the temperature of the house, and if the trees are weak employ weak liquid manure. A bed of fermenting materials formed on the border will give off considerably more invigorating heat than fire heat, whilst the moisture will be more regular and conducive to the swelling of the buds than frequent sprinkling of the trees by the syringe. Fire heat should only be employed at night to exclude frost, and by day to raise it to 50°, at and above which ventilate freely. Avoid as much as possible a close stagnant vitiated atmosphere after the buds begin to swell, and sprinkle the trees and house in the morning and early afternoon of bright days until the blossoms show colour, when discontinue the sprinkling overhead, and ventilate constantly to guard against a vitiated atmosphere.

### FLOWER GARDEN.

Where it is intended to make new plantations of Roses the plants should be ordered in good time so as to secure good healthy plants. The ground should be thoroughly prepared for their reception by trenching as deeply as the good soil admits, not bringing bad subsoil to the surface, but it should be loosened, especially in shallow soils, and a good dressing of manure applied and mixed with it. It is useless attempting to grow Roses with water lodging in the subsoil. Efficient drainage is as necessary for Roses as any other plants. If the soil be light it may be permanently improved by mixing in a good quantity of clay during the process of trenching, which should if possible be obtained in a dry state and thoroughly broken up into small lumps that it may the more readily mix with the soil. Clay buried in this way is very retentive of moisture, and the Roses like it, as is evidenced by their roots clinging tenaciously to it when the plants are removed. Where the soil is naturally stiff Roses on the Briar stock succeed admirably, but where the soil is light they do not succeed on the Briar; the Manetti stock is then in every way superior to any other, the seedling Briar being no exception. On a light porous soil the Manetti is very fibrous-rooted, on which account it makes the most of any manure that may be applied in solid or liquid form. For dwarf Roses it has no equal, but is not suitable for standards. In planting Roses that are on the Manetti stock they must be planted so that the union of stock and scion is buried about 8 inches below the surface, but those on the Briar must only be planted as deeply as they have been before, or with the roots 4 to 6 inches covered with soil. After planting securely stake the standards and mulch heavily with half-decayed dung. Cuttings of Manetti should at once be made and inserted to supply stocks for next season's working. These should be made about 6 or 8 inches long, and every eye except the top one cut clean out, or they will be constantly throwing up suckers, inserting them firmly in rows about 8 inches apart, leaving only the tip of the cutting exposed. Briars should be collected as early as possible for stocks, selecting those with smooth grey stems tolerably free from spines, as they are generally the freest growers, and as such develop fine heads. In planting allow plenty of room between the rows to allow of free access at budding time. Roses in beds that are not thriving satisfactorily should be taken up, the ground deeply trenched and heavily manured prior to replanting, cutting back any strong roots, but preserving the fibrous roots as much as possible, and taking advantage of the operation for the removal of suckers.

Falling leaves will keep the broom in constant use for some time to come, although it is hardly to be expected, where deciduous trees are numerous, that grounds in their immediate vicinity can

just now be kept in good order. Much may, however, be done by attention to sweeping and collecting what are down every morning before they are scattered by the wind. The roller, too, should not stand idle, as the walks, however good, are sure to be improved in appearance by having it frequently passed over them. Lawns as well as walks can scarcely be rolled too much, as it not only improves the appearance and texture of the grass, but is a quicker way of removing wormcasts than sweeping. It may yet be necessary to pass the machine over the lawn once more, as the grass is apt to grow knotty and irregularly at this season, presenting an untidy appearance.

### TRADE CATALOGUES RECEIVED.

Messenger & Co., Loughborough.—*Illustrated Catalogue of Horticultural Buildings and Hot-water Apparatus.*

Harrison & Sons, Leicester.—*Catalogue of Fruit Trees and Ornamental Shrubs.*

### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

BOOKS (A. C. C.).—Our "Kitchen Garden Manual" contains much information in a concise form on the culture of vegetables, and gives lists of reliable varieties. Price 4d., post free, 4½d. Mr. Shirley Hibberd's "Amateur's Kitchen Garden" is a larger work that you may read with pleasure and profit. It is published by Groombridge & Sons. We do not know the price, but it is within the amount you name. "Bee-keeping for the Many," post free from this office price 4½d., will be useful to you; also Pettigrew's book on bees, which you can obtain through a bookseller.

LIFTING AND REPLANTING VINES (G. O. C.).—In our issue of November 4th, page 374, you will find instructions on removing Vines. If the information there given does not exactly meet your case we will on being informed of the age, varieties, and condition of your Vines and border endeavour to give you such information as will be of service to you.

PRESERVING CAULIFLOWERS FROM FROST (L. C. L.).—Plants just forming heads if taken up and packed closely together in brick pits, the roots of the plants being in moist soil, may, with the aid of such covering as is needed on the glass in severe weather, be kept for a considerable time. Plants with heads already formed may be kept in a shed or cellar. If the heads are large enough for use they may be cut with 6 inches of stem attached, the stems being inserted in moist soil in a dark frost-proof place, and the heads will remain in a good state for some time. We have prolonged the supply of Cauliflowers by laying-in the plants closely together in an out-of-the-way place, such as in the frame ground, and placing a foot in thickness of leaves on them on the approach of frost. We have cut the heads quite fresh and white after they have been buried a month in the manner described. A few pea sticks laid on the leaves prevent them being blown away by rough winds.

FRUIT TREES IN TOWNS (Subscriber).—You do not tell us the extent of the town in which you say fruit trees are said to bear badly. If it is a large town the quantity of smoke and dust will doubtless affect the health of the trees; if it is a small open country town or village, we do not think that fruit trees bear worse there than they do in the open country, provided they have plenty of light, air, and good soil. Some of the latter may be wanting in the cases you refer to.

FRUIT MEASURES (J. T. S.).—The following information, extracted from the "Gardeners' Year-Book," may probably be useful to you:—*Half Sieve*—Contains three and a half imperial gallons. It averages 12½ inches in diameter and 6 inches in depth. *Sieve*—Contains seven imperial gallons. Diameter 18 inches, depth 8 inches. A sieve of Peas is equal to one bushel; a sieve of Currants, twenty quarts. *Bushel Sieve*—Ten and a half imperial gallons. Diameter at top 17½ inches, at bottom 17 inches; depth 11½ inches. *Bushel Basket*—Ought, when heaped, to contain an imperial bushel. Diameter at bottom 10 inches, at top 14½ inches; depth 17 inches. Walnuts, Nuts, Apples, and Potatoes are sold by this measure. A bushel of the last-named cleansed weighs 56 lbs., but 4 lbs. additional are allowed if they are not washed. Vegetable measures will be found in the same work.

MANAGING VINES (Idem).—Your proposed course of management is generally correct, but do not attempt to "assist" the leaves falling. The retention of the foliage is, the wood being ripe, usually a sign of the good health of the Vines. Take especial care that the inside borders are not too dry during the winter. Another good watering would probably be of benefit.

LARVÆ ON CHRYSANTHEMUM BUDS (J. N. B., Bowdon, Cheshire).—These are the young larvae of a moth called the Gothic (Mamea typica). They are found on a variety of garden plants both in autumn and spring, frequently feeding on the Chrysanthemum in October, but generally confining their attacks to the leaves.

FRUIT TREES CANCERED (F. J.).—If the majority of the branches are in the same condition as those sent we fear your trees are beyond cure. We cite the following, relative to this disease, from the "Cottage Gardeners' Dictionary":—"Trees injudiciously pruned, or growing upon an ungenial soil, are more frequently attacked than those which are advancing under contrary circumstances. The soil has a very considerable influence in inducing the disease. If the subsoil be an iron gravel, or if it is not well drained, the cancer is almost certain to make its appearance amongst the trees they sustain, however young and vigorous they were when first planted. Cancer arises from the tree's weakness, from a deficiency in its vital energy, and consequent inability to imbibe and elaborate the nourishment necessary to sustain its frame in vigour, and much less to supply the healthy development of new parts. It is quite true that over-luxuriant trees are particularly liable to this disease, but over-luxuriance is really a demonstration that the tree does not digest and secrete its juices healthily. If over-luxuriance threaten to introduce cancer the best remedy is to remove some of the main roots of the tree, and to be particularly careful not to add any

manure to the soil within their range. On the contrary it will be well, if the continued exuberant growth shows the necessity, for the staple of the soil to be reduced in fertility by the admixture of one less fertile, or even of drift sand. If there be an excess of branches the saw and the pruning knife must be gradually applied. Nothing beyond a general rule for the pruning can be laid down. Keep a considerable vacancy between every branch both above and beneath it, and especially provide that not even two twigs shall chafe against each other. The greater the intensity of light and the freer the circulation of air amongst the foliage of the tree the better the chance for its healthy vegetation. If the soil by its ungenial character induces the disease, the obvious and only remedy is its amelioration; and, if the subsoil is the cause of the mischief, the roots must be prevented striking into it. In all cases it is the best practice to remove the tap root. If the trees are planted shallow, as they ought to be, and the surface kept duly fertile, there is not much danger of the roots striking into the worst pasturage of the subsoil. Scrubbing the bark of the stem and branches with a mixture of soap-suds and urine, and, where any pruning has taken place, keeping the wounds covered with a mixture of clay and cow dung, are the best local applications."

PRUNING VINES (Subscriber).—You may prune the Vines immediately the leaves have fallen. You have been wrongly informed that spring is the best time for pruning, as when the work has been deferred until the sap commences moving the bleeding of the Vines is almost certain to follow. When pruned now the Vines seldom bleed in the spring. Cut the laterals to the bud nearest to the main rod that has had a leaf to support it, and shorten the leader to a length of 3 or 4 feet.

LITTLE GEM ROSE (N. W.).—This is a miniature Moss Rose, flowers of which were exhibited by Messrs. William Paul & Son, of the Waltham Cross Nurseries, at one of the meetings of the Royal Horticultural Society, and were greatly admired by many visitors. It is a distinct and charming addition; and if it is a good grower, and we have no reason for doubt in that respect it is worthy of a place in many gardens besides your own, and will be very valuable for affording flowers for bouquets, button-hole, and vase decoration.

DWARF HARDY FUCHSIAS (Old Reader).—We do not know to what Fuchsias you refer. Except in the mildest district of the kingdom all Fuchsias die down during the winter, and usually grow again from the roots in the spring. Some hardy Fuchsias with small flowers are Bicolorata, coccinea, gracilis, and globosa, but neither these nor any others of the genus are suitable for spring bedding.

YEW BERRIES (J. Byron).—In the case lately reported in the papers of a boy dying in consequence of eating Yew berries gathered in the Cemetery of Holywell, Oxford, we conclude that he swallowed the seeds or kernels, as the pulp is harmless.

HEATING A GREENHOUSE (W. Edwards).—Unless the structure is very much exposed, one row of 4-inch piping quite round the house will keep out the frost; but two rows would be very much better, as in growing plants for market a good command of heat is most valuable, and it is true economy to provide it. At the point nearest the boiler we should enclose the pipes in a brick or stout wood box to be covered with moveable yet well-fitting lights, and by filling the enclosed space (first covering the pipes with rubble or stout wooden slabs), of the requisite depth with cocoa-nut fibre refuse, you would have a very serviceable propagating case. A portion of the house at least should be furnished with a flat stage, placed about a foot from the glass in front for the accommodation of small plants. Larger plants would do very well on the floor of the house. By having trellises and moveable plants you could readily increase or diminish the staging according to requirements. You had better consult an ironmonger as to the elbows and connections requisite for affixing the pipes to the boiler. The pipes may either be put together with indiarubber rings, when they are easily moveable, or with old rope yarn and cement.

HEATING MUSHROOM HOUSE (E. T. S.).—We have had no experience of heating Mushroom houses with paraffin stoves, and should scarcely think they would answer the purpose. The heat from the stoves is dry, and there is more or less of unpleasant smell when paraffin is burnt in such a close place as a Mushroom house. If the walls and roof of the house are thickly thatched, and the beds are well covered with light dry hay, which should be moved frequently yet carefully to prevent its adhering to the surface, you may succeed in growing Mushrooms without a stove. A heap of fermenting materials in the house would be valuable by affording a genial heat.

PLANT COLLECTORS (Philodendron).—Plant collectors must be competent packers, and must engage assistants, and be able to manage them in the countries which they visit. Collectors for the large nurserymen not infrequently engage from one to three hundred men as assistants in searching for and gathering plants and conveying them through the jungle to the coast. A collector must have an intimate and extensive knowledge of plants and their value; he must also possess courage, enterprise, and tact, as well as have considerable capital at his disposal for the successful prosecution of his duties.

DRACENA AUSTRALIS (A Subscriber).—The plant would no doubt break again were it cut down to within a few inches of the soil, but we should not cut it down until the head has rooted, as it will by cutting the stem about half through a few inches below the lower leaves, covering the incision and the stem above it thickly with moss, which should be kept constantly moist; and when the roots are emitted, as they will in the course of a few weeks it may be detached just below the notch and potted. The old stem will also break again, and when the shoots are a few inches long they may be detached with a heel and inserted singly in sandy soil in small pots, placing them in brisk moist heat, in which they will soon root. The plant will lift with perfect safety, and may be useful for furnishing a conservatory. It does not require a stove but greenhouse temperature.

WARM CONSERVATORY (A Lady Gardener).—A temperature of 60° is much too high for Camellias, and is sufficient to account for the buds falling. Stove plants generally would succeed in such a temperature, especially plants with fine foliage, such as Palms in variety, Dracenas, Crotons, &c., with dwarfier plants for "under growth," Ferns and Lycopodiums being very suitable. The only way of supplying moisture is by evaporation troughs kept full of water on the hot-water pipes, and damping available surfaces twice a day; but this will not be sufficient to keep down red spider, syringing overhead being necessary, and the application of an insecticide with sponge or syringe will be needed to keep the pest in check. *Mandevilla suaveolens* will be suitable for the front uprights. Such a house may be rendered gay during the winter with such plants as *Poinsettias*, *Euphorbia jacquinioides*, *Geonaras*, various *Begonias*, *Branthemums*, and other plants.



**CUCUMBERS, MELONS, AND TOMATOES (C. Z.).**—A house such as you describe is well suited to the cultivation of either Cucumbers or Melons. The former would probably be the most profitable, as the demand for good Cucumbers is always great in London and other large towns early in the season. We should sow the seed in January, and grow the plants in pots in one of the divisions until strong enough for planting, and we should not allow them to bear heavily until they had covered a good portion of the trellis. They would then be strong, and with frequent surface dressings of rich rough soil and manure, and copious waterings with liquid manure occasionally, would bear prodigiously until August or September, the fruit being cut as fast as it attains market size. Immediately the plants commence waning, or the price of the fruit decreasing, you might sow seed of Tomatoes, and have strong sturdy plants ready for taking the place of the Cucumbers when these were no longer profitable. The Tomatoes would speedily commence bearing, and if needed would, with good cultivation, produce ripe fruit throughout the autumn and winter. The consumption of Tomatoes is increasing, and, owing to the disease affecting them, their outdoor culture is decreasing. Telegraph is probably the best market Cucumber, Blue Gown being a fine dark fruit. Good Tomatoes are Hathaway's Rindless and the old Large Red. If you grow a few Melons Eastnor Castle, Green-flesh, and Gilbert's Victory of Bath are free and good varieties. It is impossible to answer your question relative to the value of any or all of the above crops, as so much depends on culture and facilities for marketing the fruit.

**EXHIBITING CHRYSANTHEMUMS (E. C.).**—Without the name and address of the writer accompanying it, not necessarily for publication, a letter of the nature of the one you have sent us is not admissible to our columns.

**COTONEASTER BERRIES (W. P. B.).**—The fruit of the Cotoneaster is not poisonous.

**REMOVING TREES (Day Gardener).**—As you have occupied the garden by raising and growing fruit trees for sale you can remove the trees, as they are part of your stock in trade.

**NAMES OF FRUITS (J. S. G.).**—1, Red Doyenné; 2, Trout; 3, Vicar of Winkfield; 4, Nouveau Poiteau; 5, St. Germain. (A. P. Dorset).—6, Chaumontel; 10, Nouveau Poiteau; 15, Beurré St. Germain; 16, Winter Greening; 17, White Doyenné; 18, Marie Louise; 21, Maccas. (Claremont Longchamps).—Apples: 1, Dutch Mignonne; 2, Cox's Pomona; 3, Braddick's Nonpareil; 6, Court of Wick; 7, Alfriston; 9, Caraway Russet; 14, Dutch Mignonne. (A. P. Dorset).—Apples: 1, Bedfordshire Foundling; 2, Autumn Pearmain; 3, Dumelow's Seedling; 4, Emperor Alexander; 5, Not known. Pears: Beurré Bosc. (A. Z.).—Pear Beurré Capiaumont; 1, Paradise Pippin; 2, Pearson's Plate. (F. Taylor).—Apples: Manx Codlin. Pears: 1, Marchal de Cour; 2, Louise Bonne of Jersey; 3, White Doyenné; 4, Not known. We do not name Potatoes. (W. H. G.).—1, Jersey Gratioli; 2 and 4, Vicar of Winkfield; 3, Not known. Apples: Cox's Pomona. (H. S.).—1, Nouveau Poiteau; 2, Brown Beurré; 3, Beurré d'Aremberg; 4, Beurré Superfin. (E. L. M.).—1, Apple Golden Noble; 2, Vicar of Winkfield; 3, Fondante de Malines; 4, Marie Louise; 5, Not known; 6, Uvedale's St. Germain. (North Clay).—Bess Pool. (C. R. S.).—1, White Doyenné; 2, Bergamotte Cadette. (South Devon).—Pears: 2, Beurré Clairgeau; 3 and 7, Beurré Diel; 10, Comte de Lamy. Apples: 1, Emperor Alexander; 2 and 4, Royal Russet; 6, Margil. We cannot name more than six varieties.

**NAMES OF PLANTS (Tweedside).**—Aster Novi-Belgii. (W. M. Suffolk).—Salisburya adiantifolia, the Maidenhair Tree, a native of Japan. (R. S.).—It is, we think, Plumbago Larpenae, but the flowers were much crushed. (Somerset).—1, Solanum nigrum; 2, Mercurialis annua; 3, Geranium molle. (A. Subarrier).—Pteris argyrea, a native of the East Indies, but grows well in a cool house, yet not so well as in a stove, where it makes a very ornamental specimen. (E. C.).—40, Rhamnus Alaternus fol. var.; 41, Cupressus Lawsoniana; 42, Thuja occidentalis; 43, Cotoneaster microphylla; 44, Juniperus recurva; 45, Quercus Gramuntia; 46, Quercus Ilex var.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### THE APPLICATION OF CHALK AND LIME TO LAND.

BOTH chalk and lime are highly important factors in home farm management, and lately have not commanded the attention of farmers to which they are justly entitled. The present generation both of landlords and tenants have, unfortunately, in many instances not fairly estimated the value of these substances in the cultivation of the land. Whether we view it as a matter connected with the culture of arable land, or the management of pastures and park lands, they are the broad basis of successful agriculture; but there are numerous instances which have come within our observation in which the application of chalk or lime has been but little thought of, and consequently to the serious detriment of many estates. There are probably various reasons which have induced parties to ignore or pass over the question of chalking and liming; in some cases the distance from chalk, and the expenses attending its application, has had its influence. More frequently, we think, it has been neglected through the want of knowledge and experience of the value to be derived from its use. It will therefore be our endeavour to lay before the home farmer, not only the result of our experience of the benefit of chalking and liming of land, but the theory of their value as exhibited by chemical analysis afforded by the researches and opinions of clever and eminent agricultural chemists.

We will first consider what is chalk. We think it better to confine our definition to the actual formations of the different districts in England, Scotland, and some parts of Ireland; the most abundant of which is that combined with carbonic acid, forming a carbonate of lime, familiar examples of which are the limestone rocks, chalk, shells, corals, &c., all being of the same composition with the exception of a few impurities. In the southern and eastern part of the kingdom the most familiar is the white chalk, whereas in the north-west of England, in Scotland, and in most parts of Ireland chalk is not seen, but the same substance is in the form of a hard limestone rock. For the present we will allude to the white chalk formation, extending over an immense area, and this is divided by geologists into two—the upper and lower chalk. The first is what we meet with in the east of England; is hard and white, having numerous veins of flint running horizontally through it. The lower chalk, which prevails in the south of England, has no flints in it, is of a softer nature and not quite so white as the upper, but much better adapted for agricultural purposes. The origin of the vast formation of actual chalk of the southern and eastern districts—which extends with some intervals into France, Belgium, and other continental States—is, we are informed by geologists, undoubtedly a sediment of an ancient ocean. If you look through a microscope at these fossil shells embedded in the chalk it will be perceived that they are sea shells, and made up of comminuted shells and corals, thus proving beyond doubt that the whole of our chalk hills are nothing more than an upheaval of the sediment of an ancient sea. Chalk is composed, chemically speaking, of lime united with carbonic acid in the proportion of 56 to 44—that is, 100 tons of chalk if burnt would yield 56 tons of lime, the remaining 44 tons being sent off into the air as carbonic acid.

Our second consideration is, What is lime? It is best defined as an alkaline earth, an oxide of calcium, next to silica or sand being the most abundant of all earths. It can easily be procured by submitting any limestone or chalk to a white heat for a few hours; by that means the carbonic acid contained in them is expelled, and a white caustic alkaline earth is the result. When, however, exposed to the air it rapidly absorbs moisture, as also carbonic acid, thus returning to its previous composition. Before referring to the uses of lime it may be well to notice some of its salts, at least those relating to agriculture. Lime is found in some parts of this country in large quantities united with sulphuric acid, forming sulphate of lime or gypsum, which is, when ground fine, used largely in some parts of the country, and sown broadcast over saintfoin, often with astonishing results. One more combination may be mentioned, as it is the principal one of all—that is, phosphate of lime or bone earth, composed of lime fifty-four parts, and phosphoric acid forty-six parts. Phosphate of lime is, however, the most costly compound of any we have referred to, from the fact that, unlike the others, we have no natural deposit of any extent in this country. In Spain and America rocks of apatite or phosphate of lime exist in considerable quantities, being, however, not situated so as to bear carriage to this country, therefore our supply of bone earth must be looked for principally from the collection of bones of animals in this and other countries.

We will now return to our subject proper—the use of lime and chalk to agriculture. In the first place it is of use in a direct way—that is, actually as food for plants growing on the soil. Analysis teaches us that all plants contain a certain amount of lime, either more or less, according to the nature of the plant, and also the soil on which it grows. On the average a fair crop of wheat will carry with it per acre in the grain and straw about 14 lbs. of lime, a crop of barley 17 lbs., of clover 110 lbs., of turnips 67 lbs., making a total 208 lbs. of lime, equivalent to 387 lbs. of chalk—say 3½ cwt., taken from an acre of land farmed upon the four-course rotation, in the space of four years—that is, supposing the crops were all carried off the farm. Of course, we shall have to make an allowance for the straw and hay returned, as also for the turnips fed off on the land or consumed by cattle, &c., in the boxes or sheds. This is quite sufficient to show that in case we go on continually carrying away more lime from the soil than we return we must eventually exhaust it; therefore for the actual food of plants it is essential that occasional dressings of lime or chalk should be applied to the land. But lime acts in various ways; for instance, you sometimes hear the expression, "That piece of land is sour." Very true, probably it is sour—that is, it is acid, and requires neutralising by an alkali. Lime is the very one for the purpose, by forming a salt of lime. Again, where forests have been grubbed, or fir plantations cut down and the land brought into cultivation as arable ground, in both these cases there is a very large quantity of vegetable matter present in the soil, the natural result of the falling leaves in former years. Such land is not brought to develop its full powers of production until after the addition of a good coating of lime—say 10 tons per acre, to be repeated at intervals of a few years. In this case quick or caustic lime is preferable, as it assists the decomposition of vegetable matter to a very great extent. The changes which take place in this case are very complicated, and are readily explained by the agricultural chemists; but we prefer, in the interest of the

home farmer, to continue our remarks as regards the practical application and usage of the substances of which we are treating. In so doing we would observe that the changes would take place exactly the same if it were chalk instead of lime added to the land. When quicklime is put in it rapidly absorbs moisture, then carbonic acid, and very soon returns to its natural state, with this difference, however—that if put on as chalk it would be in lumps, whereas now it is in the most divided form possible; therefore when chalk is used instead of lime it must be in much greater quantities to produce the same result. The question then naturally arises, Which is most advantageous to apply, lime or chalk? This must depend entirely upon the locality and purpose for which it is required, because chalk is often applied where it is intended to perform a mechanical action as well as chemical. For instance, in heavy stiff land the small knobs serve to lighten the soil, thereby causing it to work better, and also to allow the rain water to percolate more readily through the land to the subsoil beneath, whereas lime being divided when slaked into such fine particles performs but a slight mechanical part during tillage. Again, when chalk happens to be near at hand and the carriage not so much an object, more especially in localities where the lower chalk is available, for it being without flints a few frosts in winter will quickly divide it into fine particles, and in such cases chalk should be preferred before lime.

(To be continued.)

#### WORK ON THE HOME FARM.

**Horse Labour.**—Wheat-sowing will still be the principal work for the horses, and on some farms it will continue to be so until the middle of the month of December, and even later upon those light and dry land farms where roots are being fed off by sheep and where the custom is to sow spring or late wheat. Under the present prospect of farming and prices, however, we cannot recommend the home farmer to sow a long lain of wheat, the work extending into the new year. We should in preference look to barley as the most profitable under such circumstances, if the land and climate should be suitable for its growth. If the weather should prove dry enough for the scarifier to work, where the land intended for roots is foul with couch or water grass a considerable quantity may be got together and cleared off the land, not by burning, but by carting it away to rot in heap at intervals during the late wheat-sowing. If this cannot be done in consequence of adverse weather it will be best to fallow plough the land a good depth which is intended for potatoes, mangold, &c., unless it should be very foul, in which case it would be better to rafter plough. Run the rafter back early in the spring, and by that means keep the couch, &c., upon the surface, and deal with it by burning or carting away during the first favourable weather. If the land is fairly clean the fallow ploughing may be done the full and usual depth, so that the land may benefit by frost, &c. The same method of applying horse labour may be adopted when it is intended to sow barley after wheat, for we cannot advise the home farmer to neglect the growth of a full lain of corn for sale, notwithstanding the low prices of grain; for in the event of next year's crop of cereals being an abundant one the acreable result may be good at low prices. Nor can we agree with the idea of "Stock versus Corn," as we have often noticed as matter for discussion at the farmers' clubs, because it has not been shown that green or root crops could be made a profitable substitute for cereals. We have always considered that although by good management a profit may be made by the feeding of stock in some seasons, yet, as it is usually carried out, it only proves to be a preparation of the land for the growth of cereals, whereby the profit on stock will about cancel the cost and charges of producing the roots, grass, &c. At odd times when the weather is open and mild the mangolds and other roots which may have been temporarily heaped in the field should now, in case they are not required to be consumed upon the land, be carted away to the store or heap and covered-in for winter use.

**Hand Labour.**—The feeding of cattle in the boxes will still be continued. Many are now, however, ripe for sale. Whether they have been grazed upon the pastures during the summer and since been well fed under cover, or whether they are two or three-year-old animals and have always been fed under cover, they will now be ready and fit for Christmas beef, and will probably make a good price. The shepherds have lately been attending sheep on turnips with greater advantage than at any time during the summer in consequence of the land being drier. During the greater part of the year sheep have suffered very much from lameness, more particularly the short-woolled stock, the various breeds of Down and crossbreeds. It may now be fairly assumed that the lameness, irrespective of actual foot rot, will occasionally occur when the weather and the land are wet and unhealthy for the animals, in consequence of the sheep having been bred for so long a period from animals affected constitutionally with the lameness. We well remember the first outbreak in 1839, and the flocks in various parts of the kingdom have never been entirely free from it for any length of time since. We also well remember that from 1826 to 1839 we were always troubled more or less with foot rot and sometimes the lower, which is an ulceration of the skin

just above the hoof. These complaints always yielded to the remedies which were applied, and never affected the sheep constitutionally or their general health like the epidemic lameness; nor did the foot rot produce abortion at lambing time as the epidemic has frequently done, to a serious extent in some seasons, during the past forty years. We, therefore, in the future recommend the home farmer to make his calculations accordingly, and always be prepared for an outbreak when the season is favourable to it. In the management at the homestead, and particularly when straw is scarce, it is recommended that as little straw as possible should be used. There will always be a portion of straw only partially soiled or saturated with urine when removed from the cart-horse stables, all of which may be daily used for littering the pigsties. Thus it will answer a double purpose, for it will keep the dung store or heap in better condition, and be found quite sufficient for use in the pig pens; besides which, after having served its purpose in the piggery will on removal make manure of improved value compared with its having been allowed to form part of the stable dung heap, where it often remains to the detriment of the manure by becoming blue-moulded or fire-fanged.

#### CLUB-ROOT IN TURNIPS—CHALKING.

HAVING felt greatly interested in reading the paper by Mr. Wilson on the club root in turnips in a September number of the Journal, I gave it to a farmer who formerly had much trouble with his crops, whole acres of turnips some years being utterly destroyed by clubbing, his land chiefly consisting of a sandy soil. He has this last few years gone to great expense in giving the land a dressing of chalk; he advocates about 40 cubic yards to the acre. He says that it has effected a cure; it has so far arrested the disease at the present that there is but an occasional plant that shows any sign of it where the chalk has had time to act, and at the same time it has proved of great benefit to the corn crops. In one of his fields he has left a portion without a dressing, and there the last time it was turnips they were badly clubbed, and the corn crop since was very inferior to that chalked. As the disease is caused by a weevil, I should like to know in what way chalk acted as such a powerful preventive. Any further information on such an important subject would, I believe, be eagerly read by many.—G. L.

#### THE CRYSTAL PALACE POULTRY SHOW.

THE great event of the poultry year has once more come round. The revived series of Crystal Palace shows has completed its decade. Again we see in the great building an exhibition at least equal to any of its predecessors. The last few dry weeks seem to have done much towards helping on the growth of chickens, and, to judge from the exhibits, the year has been favourable to the moulting of old birds. The Palace is not this year, as last, divided into two sections by a circus, but the whole building is open to the Show, and the Pigeons have their former position in the central transept; facing them, and close to the Handel orchestra, are arranged many ingenious and ornamental poultry contrivances, prominent among them being those of Messrs. Boulton and Paul. Hard by are a goodly array of baskets competing for the prizes offered by the Poultry Club, of which we will speak hereafter.

**Dorkings** are of course in their old position, and more than hold their own. The old cocks struck us as being much better through the moult, and in much finer condition than usual. They number seventeen as against fifteen last year, and are generally superior. The cup (T. C. Burnell) goes to a huge bird, good all round, of medium darkness of colour; second (J. A. & M. F. Smyth) a deep-bodied broad bird and vigorous-looking, a little dark in feet; third (Rev. E. Bartrum) a short-legged and massive bird much to our fancy, as is also the very highly commended cock. Hens are about the same in numbers as last year. The failing in Dorking hens, both coloured and Silver-Grey, now is darkness of feet, which curiously is much more striking in them than in the other sex. The first hen (Smith) is very large of the tall type of Dorking, good in colour and fairly white in feet; second (Taylor) a round-breasted good bird, much such a one as Mr. Parlett's, so often showed successfully here; third (Taylor) good in size but apparently very old, her feet white but toes not well put on. We did not like the fourth-prize hen (Gladstone), her feet are poor and dark, and she is rather decrepid. Mr. Parlett's rose-combed hen might well have been noticed. 26 (B. Smith), a good rich-coloured bird; 30 (Smyth), a fine hen. Cockerels seem to us on the whole far shorter on the leg, and better Dorkings than we have often seen of late years. The cup goes to a fine deep bird well worthy of his place; his comb is his least good point, the serrations not being even; second a fine white-footed cockerel, specially good in comb; third a nice round-breasted, short-legged cockerel, second we fancy at Oxford, his only fault some white in tail; fourth a fair all-round bird with whitish feet; the fifth we did not like, his feet are very dark and his ears white, his legs are short, and form good; 89 (Smyth) is we think the

Hemel Hempstead winner, looking well but unnoticed; 51, very highly commended (Roper), a large bird; 52 (Sir A. K. Macdonald), another very large bird unnoticed; 58 (Miss Spedding), very highly commended, short-legged, toes too dark. In the pullet class there is nowadays great uniformity in colour, which is rich and good, but unfortunately also uniformity in feet, which are nearly all dark. We went most carefully over the class of thirty-one and could only find four birds really white in feet. The cup bird (Taylor) is large and good, but not quite so good in this fatal point as she might be; second (Smyth) sprightly and rosy, and good in feet; third (Smyth) rich in colour, one of the whitest in feet; fourth (Smyth) small but very pretty in colour; fifth (Taylor) good in size with full round breast. 96, H.C. (Smyth), fine colour, form and size, but spoilt by the colour of her feet.

Silver-Greys are all good classes. The cup cock (Ogilvie) is very silvery, but his feet are in a wretched condition; second (Rev. E. H. Morgan) good in colour, deep-bodied, but with a poor comb. We much preferred the third—the cup cockerel of last year—not quite through the moult yet. In hens first (Boissier) is a small short bird, good in colour; second (Ogilvie) a nice bird; third (Buttledge) a large hen, but evidently old and with indifferent toes. The cockerels make a large class, though there are few very good birds in it. The cup goes to what we may now call Mr. Boissier's well-known winner, looking well though his tail has not grown straight; a silvery pretty bird, but with a bad toe. Third (Fellowes), a neat small-framed cockerel; 188, highly commended (Ogilvie), one of the finest birds in the class, but with some brown on the wing. Pullets number twenty-three, and are the best class of Silver-Greys. First (Cresswell) a beautiful bird all round, with really white feet; second (Mrs. Wachter) pretty good but dark in feet; third (Ogilvie) a fine short-legged, but feet again too dark. There is no class of poultry which we consider to have improved more of late years than Silver-Grey Dorkings. The dingy rusty hens which formerly appeared, and often won too, would now have no chance. The Cuckoo class is well filled, and with fine birds, though many of them fail in combs and feet. First (Young) very perfect in marking, though the cock has a horrid comb; second (Young) large birds, too light in colour; third (Lady Dartmouth) smaller but pretty. The other pair, too, shown by Lady Dartmouth are very well marked. Whites keep their position, but do not become more numerous. The cup for the best White or Cuckoo is properly given to the first White cock (Cresswell) a fine, very white, and symmetrical bird. Second (Pilgrim) is small but white; third (Cresswell) by far the largest bird in the class—the cup bird of last year, but not well moulted in tail. The first hen (Cresswell) is far ahead of the rest; second (Mrs. M. A. Hayne) a fine hen, but in the moult. Third (Cresswell) a very white, large, and square bird, young-looking; 192, highly commended (Stratford), a good bird with nice comb. As usual the five-guinea selling class contains a number of ill-matched pairs. In the first-prize pen of Darks is a nicely shaped cock, but bad in feet; in the third a large white-footed cockerel, but mated with a poor pullet. Mr. Teebay judged the Dorkings, and his awards were well received by fanciers.

**Cochins.**—The Buffs are large and fine classes. The admirers of this variety seem never to tire of it, for year after year we see much the same names to the fore. The four classes collectively number no less than 107 birds. The cup cock (Rigg) is a grand bird, beautiful in colour and fluff, and short-legged; second (Percival) a taller bird, but good in colour, a little too much inclined to the objectionable tricolor; third (Wright) very large, but showing white on the wing, and much white in foot feathering, and with too black a tail. There are many good hens in the next class. First (Burrell) a beautiful canary-coloured bird, of such a hue as is seldom seen after the first moult; second (Tomlinson) capital in shape, larger than the first, and of a medium depth of colour; third (Dixon) very short on legs, with fine fluff, but not enough foot feather. Beyond the winners are many hens worth notice. 287 (Swindell), very highly commended, pale in colour but well shaped; 247 (Burrell) a good bird, though unnoticed. No less than thirty-four cockerels compete. The cup goes to Mr. Wood's now well-known bird, short-legged and shapely, though we never admire the white in his wing; second (Swindell) a good bird all round, of lovely rich colour; third (Robin) very deep in colour, though not really a Cinnamon. We do not like a mixture of Buff and Cinnamon. The fourth-prize cockerel (Cookroft & Ashby) was the best in the class; he is a large bird, dark in colour, deep bodied and fluffy, but loose in wing. Space fails us to notice many birds in this class which deserve mention. 268 (Mrs. Christy), though small, is very pretty in colour; 267 (Pye) even in colour, and a promising bird; 268 (Clatworthy) very rich in colour, though black in tail; 284 (Rice) very highly commended, pale in colour, but very fine. The first pullet (Pearcy) is, we think, well ahead of the rest; she is fine in shape and even, though not bright in colour. Second (Lady Gwydyr) a very small bird, certainly lovely in colour, but we prefer her ladyship's very highly commended pullet; third (Mrs. Faxon) is good all round, even in colour, but we do not like her hocks; fourth (Bloodworth) a pretty pullet, a real Cochins in shape, but not large.

The Partridge classes do not come up to the Buffs in numbers. The cup cock (Percival) is a grand bird in splendid condition; his colour is rich and his fluff deep; his legs might be shorter. Second (Wood) an immense old fellow, deep and large, he is hocked and his comb not very good; third (Percival) is not through the moult in hackle, otherwise he is in good condition. The hens are another good class. First (Wood) is a good bird with capital breast pencilling, but our own fancy leads us to prefer the second (Mrs. Turner) a bird with beautiful even pencilling all over, and in perfect condition, though she might have better foot feathering. The first cockerel (Sharpe) is such a bird all round as is seldom seen; in colour, gloss, and depth of body quite perfect. Second (Wood) a broad heavily-feathered cockerel, not in trim condition; third (Wood) small, but shapely and fluffy. The pullets were placed in one of the upper tiers of pens, where it is almost impossible to judge them well. First (Wood) struck us as being only a fair bird in both size and shape; second (Fowler) a good pullet but too high in comb; third (Brown) the best marked pullet in the class; we liked Mr. Sharpe's very highly commended pen much.

The six White cocks all have cards. First (Percival) a very white bird, and splendid in foot-feathering; second (Mrs. Holmes) a broad big bird, good in fluff, but failing a little in shank feathering; third (Wood) a fine old bird not well through the moult. Mr. Tomlinson's bird is a little yellow, or must have run the third-prize bird hard. The White hens are, all round, the finest class of the kind that we have ever seen. The first and cup (Mrs. Turner) is not very large, but very pure in whiteness; second (Fowler) an immense bird not fully moulted; third (Dr. Snell) all round, in our opinion, the best hen in the class, being fine in size and all that a Cochins hen should be in fineness. She was claimed, we believe, by a good judge for ten guineas. The first White cockerel (Darby) is decidedly the best White Cochins cockerel we have ever seen, and almost a model bird in every point. The second (Ludlow) the famed Oxford winner, which has changed hands for very high figures, does not come near the first, though we before thought him almost unequalled. Third (Cookroft and Ashby) a bird of somewhat the same type, though not so white. We hear that he came from the same Scotch yard, and that £27 has lately been refused for him. The pullets are not so remarkable as the cockerels. First (Darby) a beautiful bird with possibly a little too much tail; second, belonging to the same exhibitor, very large and broad, and to our fancy decidedly better than the other, though not so well shown.

The classes for Blacks are this year called "for Black or Langshan." All the winners are of the improved type of Cochins, and doubtless the Langshan fanciers are not gratified. For some time Black Cochins made very rapid strides, but just now the breed seems somewhat stationary. In cocks, first (Miss Lightfoot) is an enormous bird, good all round; second (Mrs. Holmes), pretty, rather small; third (Darby), a well-known winner as a cockerel last year, good in shape and feather, a little damaged in comb. The first hen (Mrs. Aspdon) is good in shape and fairly green, her legs are yellow; second (Darby) glossy and handsome, failing in leg feather; third (Darby) in beautiful blooming condition, good in fluff and cushion, but short of foot feathers. The first cockerel (Darby) is, like his owner's hens, in lovely condition; he is certainly the best cockerel, though longer than we like in back. Second (Badger) a good bird all round, inclined to white ears; third (Darby) very heavily feathered. The pullets are more numerous than the cockerels. First (Mrs. Turner), very shapely and green; second (Unsworth) large and glossy, and if only of the age she is entered at (five months), a wonder; third (Darby) a pullet which promises to make an immense hen.

Cuckooes numbers but five pens, all belonging to one exhibitor, Mr. J. H. Caff. The first pair are good in marking, the hen somewhat bigger than her partner, which does not look well in a pen; second poor in condition but more Cochins-like in feathering; third but an indifferent pair.

The Selling class is an immense one. We are not fond of these selling classes, believing them to be mediums through which faulty birds are largely palmed off on the ignorant and unwary. There are, however, many nice pairs in this class, from exhibitors, too, who would not put in really useless birds. First (Fowler) are Whites, somewhat yellow, which we do not admire; second (Mrs. Christy) very pretty Buffs, rich and bright in colouring; third (Buckmaster) Buffs again, cheap at their price. We were surprised to see a capital pair of Blacks, shown by Mr. Darby, unnoticed. The Cochins classes were judged by Mr. Dixon.

**Brahmas.**—Most of the birds are placed in the upper row of pens; and the judging must have been most difficult, as the light was in some cases very bad, and in others the birds were so high up that they could not be easily examined. This may perhaps be some consolation to those exhibitors who were unsuccessful, and may also explain to those who were absent the reason why some of their birds did not rank as high in the prize list as was expected of them. Old Dark Brahmas cocks number twenty, and are a good class. The cup bird (Lingwood) is the best, but we did not much like either the second or third, both having bad combs, and the second-prize bird (C. Taylor) is also yellow. Mr. Hem-

shall's and Mr. Ansdell's birds might have taken the places of either of them, and pen 548 (Norris) might have been mentioned. The class for old hens muster twenty-three entries, and are a fairly good class; bad combs are very prevalent and spoil the appearance of many otherwise handsome birds. The first (Clarke) is the best all round, but the second (Norris) we thought rather better in pencilling, and might have won if she had more foot feather. The fourth-prize bird (Lingwood) we prefer to the third (Peake), being less brown and a better comb. There are strong classes of Dark Brahma cockerels. The Black-breasted birds number forty-one, but show very badly, being placed in the upper row of pens. We do not like the first-prize bird (Wood) much, as he is badly hocked and has a coarse head. Second (Lingwood) is much better in nearly every point, and the same exhibitor's unnoticed bird (602) is a very good one. The third (Dr. Earle) is a pretty cockerel, also the fourth (Norris) which will improve with age. The fifth (Hon. Mrs. Hamilton) is a good bird though hocked. There are only two commendations given, and we thought more might deservedly have been given; pen 603 (Norris) unnoticed, is good. Mottled-breasted cockerels number thirteen and are a poor class, the winner (Lingwood) being the only noticeable bird amongst them. He is a well-made and very evenly mottled bird, and doubtless will be useful for pullet breeding. Pullets are a large class of fifty-one entries. The cup winner (Percival) is a very good one, well feathered and well marked, but not so good in ground colour as some Mr. Percival has shown in past years. Second and fourth both fall to Mr. Bennett, and we rather prefer the latter of the two, as she is well marked all over. Third (Wheaton) is also a large and well-marked bird. The fifth (Fullarton) and sixth (Lady Gwydyr) we do not much admire. Pens 681 (Skinner), 688 (Wiggins), 649 (Newnham and Manby), and 660 (Comyns) are all good birds and worthy of more notice.

The awards in old Light Brahma cocks are most inexplicable. The first two (Mead and Buckston) have the worst hocks we ever saw on any prize birds, and either third (Kendrick) or fourth (Pritchard) might very well have taken their places. Pens 702 (Mitchell) and 704 (Morgan) would have done well for third and fourth positions. Old hens are a grand and large class. The first (Lingwood) and second (Ive) are a grand pair, with very little to choose between them. The third (Wood) is very large and fine, but rather short of feather. Fourth (Stephens) a grand hen, but out of condition, and it is a question whether either of her neighbours—788 (Lady Gwydyr) or 785 (Mrs. Holmes)—might not have changed places with her with advantage. The cup cockerel (Statton) is beautiful in shape and colour, but looked rather small. Second and fourth fall deservedly to Mr. Lucas, and his unnoticed pen is also good. Third (Haines) is inferior in comb, but otherwise very good. Sixth goes to the same exhibitor, but we rather prefer his commended bird. Pullets are a strong class, and must have been difficult to judge, being in a bad light. The cup bird (Wood) is very good in shape and colour, but rather short of feather. Second (Breeze) and third (While) also very good; in fact, there is not very much to choose between them. Fourth (Hall) and fifth (Dowker) are rather creamy. 798 (Haines) and 814 (Wood), unnoticed, are much above the average.

*Spanish* cocks are a small class, only seven being entered. First (Jones) is a bird of fine quality of face, very good in lobe and comb; second (Bull) is rather coarse in face, and we prefer the third, belonging to the same owner, as being finer in face and of better quality than second. 890, highly commended (Fowler and Co.) is a good bird. Of hens, first (Woods) is a splendid bird, very fine in quality, fine large comb; second (Le Sueur) is also a good bird, possessing a face of very nice texture; third (Thomas) is a good hen. In cockerels, first and cup for best cock or cockerel went to Mr. Le Sueur for a bird of fine quality; the worst fault we can find is that one lobe is considerably larger than the other. In other respects he is a good bird; second (Walker) is a good-faced bird, although the face appears rather small; third (Bull) a very clean-faced, good-combed bird. Of pullets, first and cup for best hen or pullet went to Mr. J. Woods for a very good bird, splendid in face and good in comb, and of nice size. It is questionable if second (Walker) should have occupied any position in the prize list, as the birds appear to possess male characteristics. Third (Bull) is a very pretty pullet and has a good face.

*Polish*.—Of Golden-spangled cocks, first (Partington) is a dark-coloured bird, and if you catch him right he looks well, but he is too black on the breast, and his tail is devoid of lacing; he has a fairly good crest. Second (Huish) is a cockerel and a very sprightly bird, good in crest, and extremely so in colour and marking; third (Sewell) is a cock of great merit, excepting that he is not in nice feather, a point in which most of the birds of this variety are lacking, as almost all the year-old birds are nothing like through the moult yet. Mr. Burrell's is a rich-coloured bird, very well laced, but he is quite backward in crest yet. Of hens, first (Tweedale) is a good crested one and good also in shape, but she is not equally good in colour; second (Boothby) is a good-crested well-marked hen, good in shape; third (Partington) is heavy in marking and not bright enough in ground colour, but she has certainly a finely

shaped crest. Mr. Scott's hen is a pretty one; Mr. Burrell's is nice in crest but deficient in colour. 1517 (Tweedale) is a handsome hen, we like her colour and marking much; 1518 (Silvester) is not so good in colour and marking as in crest, which is very large; 1519 (Jarvis) is the best pullet in the class and will make a very good hen no doubt; 1528 (Unsworth) is a bird which it seems strange should have escaped mention. She is a good all-round bird.

In Silver-spangled cocks Mr. Burrell is easily first with the bird which won the cup at the Palace a year ago. The bird is good in all points, and will take much beating. If he had been a month forwarder in feather he would most likely have had the cup again this year. Second (Burrell) is also a bird of very good general characteristics; if he were perfect in shape he would be a splendid fellow, although his crest is not equal to the first, as it shows a little tendency to split in the middle, still he is very fine in front and is well marked, having a very clear tail. Third (Adkins) is a long way behind in crest; 1539 (Bloodworth) and 1540 (Lady Dartmouth) are both good, but neither are up in crest yet. Of hens the first (Adkins), which wins the Polish cup, is a beauty, as near perfection all round as we have seen for some time. She is large and compact in crest, and well laced all over. She deserves the cup. Second (Adkins) is very good in crest, and a well laced bird; third (Burrell) is also very good in crest, but is not so perfect in marking, being a little inclined to be mossy; 1554 (Silvester) is too dark and heavy in marking, but has a large and very compact crest; 1556 (Shepherd), unnoticed, is very fine in crest and a good bird, but perhaps a little round in the back. Mr. Cannan's hen is rather too dark, otherwise good; Mr. Bloodworth's is a very good one; and so also is Lady Dartmouth's, which is very well marked, and has a very large crest.

Through the liberality of a leading Silver Poland fancier, who offers the prizes, this variety, for the first time at the Palace, is provided with classes for cockerels and pullets. In cockerels first (Adkins) is a thoroughly spangled-breasted one, and is a good bird throughout, excepting his shape does not seem exactly the thing. Second (Burrell) is a mere chicken yet, but he will some day be a beauty, for he appears to possess all the points of excellence of the first-prize cock. He is a very promising bird. Third (Bloodworth) is a good-shaped nicely crested bird, very lacy about the head, also well marked on the breast and wing; 1545 (Adkins) is another spangled-breasted bird, very good in crest and fine in shape, will make a very good adult; 1548 (Smith) a well-marked bird, very good in crest. The first pullet (Smith) is, we think, the Oxford winner, a very good bird, with large and compact well-marked crest; a handsomely marked bird. Second (Smith) is also a fine pullet, good in crest, shape, and marking; third (Bloodworth) a good bird with nice crest, and good in other points; 1562 (Adkins) appears to be worthy of more notice than she has obtained. She is a good bird. 1565 (Burrell), unnoticed, rather young, but very promising.

In Black or Any other colour cocks first (Broad) has well earned his position when in other hands. He is a good bird, but is not thoroughly up in plumage yet. Second (Beldon) is a very good Buff Poland, or Padue Chamois, as the breed is called in France; very good in crest, and in nice plumage. Third (Unsworth) is a Black of fair merit, but not quite through the moult yet. In hens first (Unsworth) is a good Black; second (Beldon), the mate to the second-prize cock, both of Paris repute, a very handsome and meritorious bird; third (North) a fair bird, though smallish in crest. What could be the reason that 1584 (Unsworth) was unnoticed? Had she been too much trimmed? She looked the best Black hen in the show.

#### PIGEONS.

Who can say anything new of a Show which has gone on in the same place for eleven years? It is no longer a marvel that the whole of the Palace at Sydenham is once a year filled with poultry and Pigeons, long nave and broad transept. At first people were surprised, now all are used to the poultry carnival and its great field days. All, then, this eleventh year is much the same as on former years—long practice has made perfect; alteration in the sense of improvement is hardly possible as to management. The place is the same, the chrysanthemums similar, and quietly in their floral beauty reminding us that Christmas is coming. One thing is painfully the same, the Palace is as draughty as ever. As to the devotees of the poultry and Pigeon world, all look much as usual. Time deals gently with poultry judges and fanciers. I think the young men are most altered; I spy grey hairs in the whiskers, but the old well-known poultry heroes are as usual. I made my first visit on Monday quite conscious that prize cards cannot possibly be up, and that judging must be going on—it could not be otherwise, and the Show is so large that the first day there must be for some hours chairs blocking the way and keeping separate; judges frightfully grave, and no little puzzled how to decide between rival beauties. A distinguished and facile writer has lately told us that to see Paris properly is not to follow any plan, but carelessly to walk about and see and enjoy. This will do for a first visit to this great Show. Go anywhere just as it happens, see feathered beauty in various forms as it comes before

the eye. This I do to-day, but to-morrow it will be catalogue in hand, and pen after pen of birds in rotation examined. As to the Pigeons there are fewer than last year, but the quality has improved as a whole. There is, however, one great miss—we no longer see the large and handsome pens under the dome, each containing six pairs of different varieties of Pigeons. These were most attractive—quite the feature of the Show, and non-fanciers spent more time in front of them than in front of any other birds. Why are they gone? In their place a class, a small one, for the best pair of any variety bred in 1879. This is a sad falling-off, and a blotting-out of one chief beauty of the Show. I notice that the practical turn of Englishmen is shown in the great number of homing birds exhibited, birds of utility; and also, I fear, the pinch upon many owing to the depression in trade is shown in the immense selling classes occupying three pages of this catalogue. Such is a general outline of this beautiful Show as to Pigeons as seen by me on Monday.

Tuesday, November 18th, a brilliant mild morning, and I am again in the Palace. First come the *Pouters*, and first among them the Black Pieds, which seem to be improving as to slenderness; large and stout they have long been, but now slenderness is added. This property was to be noticed particularly in the second-prize cock (Bullen). A hen (Hairsire) won the cup, a very large bird and good in colour, while third-prize (Holmes) had a pretty rose wing. The Red and Yellow Pieds one is always afraid to come to, as their colour is usually so unsatisfactory, but less so this year, as the first Yellow (Dye) proved. The third Red (Tenney) had colour and size. The graceful Whites came next, which have achieved of late larger crops. In the cock class first-prize (Fulton) was far ahead. The same owner took the cup for White hens, a smallish but graceful bird with admirable well-covered limbs. As to the young *Pouters*, they showed by the want of size in many of them the very bad season it has been for breeding. The cup cock (Holmes) an exception. Yellows appear to be on the increase. First Yellow hen (Fulton) a gem, but too gay in crop. The Pigmy *Pouters* seem to be becoming more popular, though some very queer-coloured birds appeared among them. A most noticeable bird was present, but not for competition; it was a black-pied bird of exactly the correct standard colours. This was bred and is owned by Capt. Norman Hill, who has been twelve years achieving this wonderful feat—a success equal to Sir John Sebright in producing the Bantams called after his name. This bird was the wonder of the Show.

The *Carriers* were remarkably good, and the Duns perhaps unequalled. The cup birds (Fulton, Maynard, Dye, Stephens, Jones, and Kempton) were excellent in their various properties, but perhaps slenderness of neck prevailed unusually, giving wonderful grace.

*Dragoons* more numerous than ever, and beautiful in colour and form. The Yellows now show no slate colour in the tail, would that the Red did not. Mr. Bishop is still pre-eminent in brown-barred Silvers. The old-fashioned grizzled Dragoon has reappeared; indeed in all classes these birds showed well.

*Almond Tumblers* still deficient in colour, and chiefly head-and-beak birds. Mr. J. Baker showed a most exquisite Kite, quite what a Short-faced Tumbler should be. *Barbs* were considered among the best class of Pigeons shown. The best (Walker and Baker), had the round head, and yet the long body so much needed in this variety. *Jacobins* good in colour and in points, but very large, except the Blacks, the cup Black (Heritage) being, perhaps, the best Jack shown. The White class, a fairly large one, was a very good one; while an "Any other colour" class brought Blues, Mottles, Duns, and Strawberries before one's eyes—rather peculiar colours. Mr. Ure sent a true Scotch Fantail of the olden type, but English fanciers win with birds compounded of Scotch and English. Cup Saddleback (Taylor), very good, and coloured Fans improving. *Nuns* few and all Black except one, which was a Yellow. *Trumpeters* never better, particularly those of that persevering and truly patient fancier Mr. Hutchinson. English *Owls* a strong class. These birds, once threatened with extinction, increase much in favour. Threatened people sometimes do. Few Foreign *Owls*, but an exquisite Blue (Dr. Bowes) took the cup. *Turbits* were most numerous. *Sea-Swallows* or *Terns*, very dainty birds of feather, had a good class; while the *Magpies* were most numerous and good. *Archangels* few. *Runts* fewer but of immense size. A fair lot of good Flying *Tumblers*. The great number of *Antwerps* (Homers), and vast Selling classes I have already noticed.

Such was this beautiful Show. People are always apt to scorn what they do not understand, but once learn to understand the properties of fancy Pigeons, then you will see great beauty in the different varieties. They are very fascinating both as a study and a hobby, and it is therefore no wonder that a large and increasing number of ladies and gentlemen are devotedly fond of them, and find great pleasure in their culture.—WILTSHIRE RECTOR.

#### VARIETIES.

THE Derby Poultry, Pigeon, Rabbit, and Cage Bird Show took place on the 8th and 10th inst. at the Drill Hall, Derby.

The Exhibition, which comprised nearly a thousand entries, was the most successful one yet held. There were several features worthy of note in the fowls (especially the Game classes), Pigeons (the first Blue Pouter, and first and second Carriers) and local Rabbit classes; but there was likewise another feature unworthy of note, that of some cinnamon Canaries, exhibited by Mr. Thomas of Nottingham, which were disqualified for being painted.

—A CORRESPONDENT writes to us as follows on the Clonmel Root Show—"The Agricultural Society of Clonmel and vicinity are to be congratulated on the fine exhibition of roots, grain, &c., which was held on the 12th inst. under their auspices. Some splendid roots were shown that would do credit to any soil or situation any year; notably by Mr. Cheanley, Salterbridge, who obtained three first prizes, using farmyard manure and Lawe's superphosphate. Probably larger specimens in a collection, for which a special prize was recommended, were those shown by Mr. George Lane for Col. Villiers Stuart, Castletown. It would take some of the best localities in England to produce Suttons' Long Red mangolds 84 lbs. each and finer parsnips (Hollowcrown and Stone), while beans 9 feet high are something to see. Little less notable were the root exhibits of the energetic President Lord Lismore, and Lord Beasborough's, Piltown; while the first prize for a farm collection, as in former years, went to Robert Cooke, D.L., Kettman Castle, Felhard. Sir John B. Gough won three first prizes in the grain department. Perhaps of even greater interest to the farmer representatives present were Lord Lismore's potato collection of seventeen of the best varieties grown, including Suttons' Magnum Bonum and the, now deservedly noticed in Ireland, Scotch Champion, both almost wholly free from disease."

—THE FRENCH BEETROOT CROP.—The production of sugar in France from 1st September to 31st October, 1879, according to official statement, was only 85,000 tons, as compared with 138,000 tons in 1878, 132,000 tons in 1877, and 84,000 tons in 1876.

—THE AMERICAN MAIZE CROP OF 1879 is said to be immense. The area devoted to this grain in the States of Illinois, Missouri, Kansas, Nebraska, Iowa, Wisconsin, and Minnesota is 23,000,000 acres, which, on an estimated yield of 40 bushels per acre, will produce 920,000,000 bushels.

#### MODERN BEE MANAGEMENT.—No. 13.

##### CONTROLLING SWARMING.

In my last paper I stated that the bee-keeper whose main object is honey has to choose between the non-swarming system and that of limited increase. The former was considered, as the result of my own experience, to be in a strict sense practically impossible. I shall now briefly indicate how the latter system may be carried out. By "limited" increase let us understand that stocks are not to be multiplied to anything like the extent of 200 or 300 per cent., as where natural swarming is practised without limit, but that no further increase than from 20 to 30 per cent. is to be allowed. Such an increase is desirable even when one has already reached the maximum number of stocks he intends to keep; for, owing to such casualties as poor honey seasons, loss of queens in winter, or spring dwindling, it will generally be found that such an increase will be entirely absorbed before another honey season comes round.

It is most desirable that every stock in the apiary should be in a position throughout the honey season of adding its due quota to the harvest, and therefore we endeavour to have all multiplication of stocks completed before that season arrives. The strong are called on to help the weak in combs, brood, or bees until all are as nearly of equal strength as possible, and generally the methods in use for preventing swarms, as described in my last paper, are employed up to the time when supers are placed on all the hives. Then, however, if not before, we find that we are compelled to yield somewhat to Nature, for swarming is a natural impulse, whatever be its immediate cause, and takes the form of a mania that nothing will usually allay short of its accomplishment. Should no swarms issue after all, so much the better. Our honey harvest will be certain if honey is to be had, and we can afford to wait till that is gathered before we proceed to multiply our stocks. But it usually happens that our best stocks will insist on "casting" just when honey is most abundant. Instead, however, of endeavouring to thwart the instinct, we judge it better to humour it. Our swarm issues and is hived in the usual manner, except that at least two or three combs of brood are given to it from the parent hive, and empty combs or sheets of foundation sufficient to fill up the hive. The swarm is now placed in its old location to be still further strengthened by the returning bees. By next day it will be seen that the bees have gone to work with renewed vigour under the pleasant delusion that they have had it all their own way. Then but not sooner we replace the supers on which they were formerly at work, and so heartily do such new swarms labour that in a few days almost as much progress is found as if they had never swarmed at all.

The parent stock must now be attended to in its new location. It, too, has got over the swarming mania, which, however, is apt



to be renewed on the hatching-out of the young queens; so, as prevention is better than cure, we cut out all royal cells but one, or, better still, we cut out all and give it a laying queen from a nucleus. The likelihood is that we have other stocks which can well spare a comb of brood each to insert in the place of those given to the swarm. If a laying queen be at once given this stock will be ready for supering in a few days, but if left to rear a queen for itself it is more profitable to leave it unsupplied; for, as the young bees daily emerge from their cradles, there is abundant storage room in the body of the hive; and as the larvae are sealed over the whole force of bees is in a few days at liberty to forage in the fields. Such hives should therefore during the next few weeks be reserved for the extractor, and will in good seasons yield large returns.

Should another hive swarm within a day or two it should be similarly treated, except that the remnants of the two stocks may be united, making a powerful colony fit for immediate supering.

Other methods of controlling swarming are common amongst advanced bee-keepers, but as they rather belong to the system of artificial swarming I do not refer to them here. I may only state my candid opinion that no system of artificial swarming yet invented can be relied on as a sure preventive of natural swarming, and it is with the latter we have supposed ourselves to be dealing in this paper.—WILLIAM RAITT.

### WINTER PASSAGES—CHAFF COVERS.

THE necessity for winter passages was constantly referred to at the recent conversations of the British Bee-keepers' Association, but as the meaning of the expression may not be perfectly clear to many, while many more may not see why these holes in the hive combs (for such are winter passages) should be made, a few words on each point may be both useful and interesting. Bees during cold weather concentrate, many thrusting themselves into the unoccupied cells of the comb they cover, while the rest huddle between them. The more intense the cold becomes the more they crowd together, so as to expose less surface to the effect of the surrounding air. The cluster thus formed should theoretically be globular, because the globe of all forms has the smallest amount of surface in proportion to its mass; but it will be seen that if five or six seams—i.e., layers of bees between combs, be forced to contract because of increased cold, the bees, if their combs have no openings, cannot decrease the number of the seams without passing round the edges of their wax tracery. This the cold would prevent them from doing, even if their instinct would lead them to make the attempt. Thus the globular form is departed from, and its advantage lost at the very time that it is most essential, while the end seams containing fewest bees are most exposed; besides, those most tried have no opportunity of changing places with more snugly-positioned neighbours, and as a result frequently, in sharp snaps of cold, die in their cells. Ceasing to be heat-producers, as every living bee is, they fail to afford any protection to those next to them, and so frost weakening the colony has already prepared the way for its more ready conquest as the cold spell continues; but if small holes have been cut into the combs, the bees as they draw nearer together, passing through the aperture, retain in some sort the theoretical form of the cluster, while the outside seams if weak in numbers join the detachment next nearer the centre, making it strong enough to defy the cold.

At the opening of last spring I saw many hives that had all but died out where winter passages did not exist. The far off seams of bees dead in the cells too clearly pointed out the necessity for these openings. But winter passages have other advantages. Upon examining a defunct hive it is often mistakenly asserted that it could not have died of starvation since it contained abundance of honey. The honey stored in the upper parts of the comb is kept continually at a tolerably high temperature by the ascending warm air and by the close contiguity of the heated cluster. The lower edge of this honey during severe cold is progressively being consumed and utilised in heat-production. When the thermometer rises the bees bestir themselves and commence carrying honey from the outlying portions of the hive to the immediate neighbourhood they are occupying; but should Jack Frost make a lengthened sojourn this carrying of supplies to the centre is prevented, and when the store lying over the cluster is gone the bees must starve, however much honey unreachably combs may contain. But if winter passages have been cut a bodily progress of the cluster is possible, and is actually made from the emptied larders towards others that instinctive industry has filled, and so not until all store is gone is starvation likely to occur. These winter passages—holes the size of the end of the finger—should be made with a penknife or gouge late in the year or they are likely to be built up again unless, indeed, the precaution is taken of inserting a curled shaving having an orifice of not more than half an inch in diameter. The position for these openings most to be recommended is about two-thirds of the height of the comb from the lower edge of it, and rather nearer to the mouth of the hive than the back. There made they will never stand out of the way of the cluster in winter quarters.—F. CHESHIRE.

### OUR LETTER BOX.

**NITRATE OF SODA (J. M.).**—It is both a food and a stimulant. A food, inasmuch as it supplies two ingredients—nitrogen and soda; and a stimulant so far as it causes plants to extract the other essential elements from the soil required for the production of vegetation. If these other elements are absent—that is to say, if no yard or town manure, or guano, have been used for some years, there is no doubt that nitrate of soda is calculated to reduce the land to a still lower state. It is in consequence of this that we recommend to the farmer the use of the phosphates in connection with it. Under ordinary farming, however, the land usually receives a dressing of dung once in the four years, besides the applications and dressings for root culture, &c., and also the manure left on the land by feeding off roots with hay and other food; but all the experiments by Mr. Lawes and others show that the land must be in a very high state, and that it must contain in its composition potash, lime, &c., and the soil itself must be holding and of a good aspect for nitrate of soda to answer a fairly good purpose when applied alone. Under any circumstances it acts better and safer when applied in the spring and summer in dry weather, and in combination with the phosphates in some form or other, such as mineral or bone superphosphate, or guano containing the usual soluble phosphates.

**MATING POULTRY (Brahma).**—You propound a vexed question, and one that has never been authoritatively answered. As Sir Roger de Coverley said, "Much may be said on both sides of the question." The former belief was, you could not trust to any eggs from a pullet under the circumstances till she had laid out and become broody. It is now believed if she is removed and put with the cock from which it is desired to breed, the eggs may be depended upon after a fortnight. From experience we hold with the latter opinion.

**POWLS DYING (Mr. C.).**—Your birds appear to be succumbing to a virulent attack of roup. You had better keep them under shelter, and give daily one grain of sulphate of copper to each bird, mixed in oatmeal mashed with ale, giving also plenty of green food. Any offensive discharge from the nostrils, should be washed off frequently with tepid water.

**COLOUR OF ANDALUSIANS (T. S.).**—The face of an Andalusian fowl should be red, the carlobe white. The plumage generally is blue, as you suppose, but the hackles and back of the cock should be of a glossy dark steel colour.

**POUL BROOD IN COMB (J. K. D.).**—It would be more convenient for an examination if three or four suspected cells were sent in a small box instead of a large piece of comb in paper, as the latter is nearly certain as in this case to get crushed. We are sorry to inform you that the comb is very badly diseased, but since we do not know the nature of the hive from which it came it is difficult to advise, but in any case at this late date doing much is impossible. We greatly dislike suggesting the destruction of bees, but this seems in your case desirable for the benefit of the others which, if they survive till early spring, will probably rob them, planting foul brood in some of your best hives. The comb should be carefully burned and the hive disinfected if a bar-frame; if a skep, it should share fate with the comb. Any contained honey can be used after boiling as bee food or otherwise disposed of, as it will be then innocuous. This stock may already have infected some others of your apiary, so that we should strongly recommend that no food be given in the spring to which salicylic acid has not been added.

**ABYSSINIAN LOVE BIRDS (A. H.).**—The birds are imported into this country with their wings cropped. Do not let them be at large in a room until they have moulted out their flight feathers and obtain wings fit to fly with. Keep them in a cage until then. They belong to the order of climbers, and use their beaks and feet pretty freely. We have known them to meet with death with only a slight fall. We give our birds white millet seed, and treat them to a small piece of chewed bread and butter at breakfast time, of which they freely partake, being apparently free eaters. The dead bird you have sent has not had a sufficiency of proper food.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1879.	Nov.	Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
			Inches.	deg.			deg.	deg.	deg.	deg.	deg.	
We. 12		30.241	44.4	40.1	N.W.	45.0	45.5	41.1	83.1	35.3	—	
Th. 13		30.103	36.9	33.6	N.W.	43.3	46.3	35.5	81.3	37.0	—	
Fri. 14		30.305	34.0	33.0	N.W.	41.7	43.3	26.7	77.7	20.8	—	
Sat. 15		30.437	34.8	30.9	N.N.E.	40.5	40.6	26.3	75.4	18.4	—	
Sun. 16		30.446	28.5	27.0	W.	38.5	38.5	23.0	38.6	17.8	—	
Mo. 17		30.385	42.6	41.4	W.	38.7	50.3	29.8	49.5	30.9	—	
Tu. 18		30.358	50.7	49.0	N.	41.0	53.3	43.1	63.3	40.0	0.015	
Means.		30.335	38.8	36.3		41.3	46.1	32.3	60.7	37.3	0.015	

### REMARKS.

- 12th.—Beautifully bright clear day, cold wind; clear starlight evening.  
 13th.—Fine, bright, cold day, windy; clear night.  
 14th.—Thick white frost in early morning; cold bright day; clear starlight night.  
 15th.—White frost in morning; bright cold day; slight fog in evening.  
 16th.—Generally overcast, cold dull day, not a glimpse of sunshine; slightly warmer in evening.  
 17th.—Damp dull day, much warmer; bright starlight evening after 8 P.M.  
 18th.—Very clear, fine, spring-like day; hot sun.  
 Four days sharp frost, 13th to 16th, and warm days both before and after. No rain except a little dampish drizzle after midnight on 18th.—G. J. SYMONS.

### COVENT GARDEN MARKET.—NOVEMBER 19.

THERE is scarcely any change to note this week; large supplies of foreign Apples reaching us, the bulk from Canada. Prices remain without alteration. Kent Cobs in demand.

## WEEKLY CALENDAR.

Day of Month	Day of Week	NOV. 27—DEC. 3, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.		Day of Year.
			Day.	Night	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.			
27	TH	Kingston Chrysanthemum Show.	47.0	38.6	41.3	7 40	3 56	2 46	6 24	13	12 16	331						
28	F	Quekett Microscopical Club at 8 P.M.	48.1	38.9	41.0	7 41	3 55	3 20	7 30	15	11 56	332						
29	S		51.3	38.8	42.5	7 43	3 54	4 2	8 30	16	11 38	333						
30	SUN	1 SUNDAY IN ADVENT.	48.0	34.6	41.3	7 44	3 53	4 54	9 21	16	11 14	334						
1	M		48.8	34.9	41.7	7 46	3 53	5 57	10 3	17	10 52	335						
2	TU	Geological Society at 8.30 P.M.	47.4	33.7	40.5	7 47	3 52	7 4	10 26	18	10 29	336						
3	W	Society of Arts at 8 P.M.	47.0	35.8	41.4	7 48	3 51	8 16	11 2	19	10 6	337						

From observations taken near London during forty-three years, the average day temperature of the week is 46.8°; and its night temperature 34.5°.

## FRUIT FARMING.

**S**INCE agriculture has unfortunately become such an unprofitable pursuit the minds of men have been turned to a greater degree than usual to the subject of fruit-culture as a commercial enterprise. It must be admitted that the general barrenness of orchards during the past three or four years is not encouraging, yet there is no more valid reason for a cessation in the planting of fruit trees than there is for restricting the cultivation of Turnips, Potatoes, and Wheat. That the fruit supply of this country is totally inadequate to the wants of the population is an admitted fact—a fact, too, that is being recognised in a practical manner, seeing that an increase in the orchards of this country is officially recorded of nearly 6000 acres during the last twelve months. Indeed it has only to be stated that £2,000,000 per annum is expended in the purchase of hardy fruit from America and the continent of Europe to convince all who consider the subject fairly what room there is for the expansion of the trade in home-grown produce.

Corn-growing is decreasing in England, and the area of pasture land is increasing. It is fair to assume that the change is found to be profitable to cultivators, and this being so the land under pasture must be enhanced in value; but its value might be still further increased if fruit trees were judiciously planted in suitable positions. A reasonable number of standard Apple trees planted in grazing pastures would not materially injure the herbage; but they would in a few years, taking one season with another, pay the rent of a holding, and the pasturage would remain as profit. But tenants cannot be expected to invest in fruit culture on a large scale unless they hold the land on very long leases; for as soon as the trees fairly commenced bearing the increased value of the land would be manifest, and the rental would increase as a matter of course. For that reason yearly tenants will not plant fruit trees as a commercial speculation. But why do not landowners plant them? No investment in improving their landed property would pay them better. Instances of this system of increasing the value of land were recorded more than two centuries ago. In a "Treatise on Fruit Trees," published about 1653, the author, Ralph Austen, gives the following evidence of the increase in the value of landed property by the planting of fruit trees, and quotes from a still older work in support of his statements. Alluding to the orchards of Herefordshire, Worcestershire, and Kent the old author observes, "The common prejudice against fruit trees in fields is that they spoyle the grasse, but land not being worth more than 10s. to 13s. 4d. per acre for grasse, by the planting of fruit trees upon it, was afterwards worth 30s. to 40s. or even 50s. per acre, and the fruits upon the trees may yield some £3 to £5, or some to £6 to £8 per acre." That statement does not bear any suspicion of exaggeration, but, on the contrary, seems to be the result of sober judgment, and the facts appear to have been ascertained with care.

It is interesting to note the evidence thus adduced as to  
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the value of fruit trees in the olden time; but what is more important is the fact that the same relative value of land under fruit and under ordinary agricultural tillage is as apparent in 1879 as it was in 1653. It is a well-known fact that much land in Kent mainly devoted to fruit culture is held at a rental of £6 per acre and upwards—land that is certainly not superior in staple and fertility to thousands of acres that I am intimately acquainted with in other localities, and let at from 30s. to £2 an acre: and there is much land in England occupied with fruit trees in bearing that is readily let at more than double the price above quoted. It is a mistake to suppose that Kent is the only county in England in which fruit can be grown of high quality and in a profitable manner. I have seen crops of Apples on good soil in the midland counties fully equal to those in Kentish orchards; indeed there is scarcely an agricultural district in England where good farm crops are grown that will not grow excellent crops of Apples, Plums, and the various small fruits for which there is always such a great demand in all cities and populous urban districts. There is no fear of the markets being overstocked with fruit, for not only is the population of the kingdom rapidly increasing, and especially in towns, but the importance of fruit, not as a luxury merely, but as a wholesome article of food, is being increasingly recognised. The planting of a reasonable number of standard Apple trees on pasture lands in various districts would alike benefit the landlords, tenants, and the great body of consumers who are longing for the fruit that they cannot obtain. This mode of fruit-farming does not demand a great outlay in the first instance, as trees can be purchased at 1s. 6d. each and less, and if well planted in good soil, made secure against the wind by staking them for a year or two, and against sheep by loosely enveloping their stems with fine-meshed galvanised wire netting, they need no further care.

But there is other land in hundreds of parishes that is of no real value in its present condition which, if placed under fruit culture, would unquestionably be turned to highly profitable account, and that is wood land. In numerous places a portion of land now occupied with forest trees of little or no value, and scrubby undergrowth equally unprofitable, could well be spared for fruit culture without either interfering with the preservation of game or marring the appearance of noblemen's or gentlemen's estates. There are many copses that might be grubbed up with great advantage, and points and angles taken off plantations, not only without loss, but with certain gain; and the appearance of an estate would be improved rather than otherwise by the change suggested.

In forming orchards contiguous to plantations it is essential that effective measures be taken to exclude rabbits, and this can only be done by fencing the orchards with strong galvanised wire netting sufficiently small in the mesh to prevent the smallest rabbit passing through; and the netting must also be so fixed that the older animals cannot pass under. I have had the best evidence that it pays well to place such netting round plantations of young Larch and other forest trees, and it would unquestionably pay equally well to place it round fruit trees. The best of all modes of putting down

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netting that I am acquainted with to exclude rabbits is to bend 6 inches of the bottom at a right angle, and lay this flat about 2 inches below the surface of the soil, and facing the side from which the animals make their attacks. Sinking it 6 inches in the ground without bending is of little use where rabbits are numerous. They usually commence scratching about 2 inches from the object, and if the soil is light they will go down a foot rather than be defeated in their object in getting below the barrier; but when they find a layer of wire laid flat just beneath the surface they soon desist from their attacks. This is the practice adopted on an estate where miles of wire have been employed during the last twenty years in surrounding young plantations, and by no other plan could the animals be excluded from the parts enclosed.

The cost of clearing woodland and preparing the land for fruit culture is no doubt often rather costly; yet if the work is well done the capital is soundly invested. It is only when the work is half done that there is any danger of it proving unprofitable. An instance of converting unremunerative woodland into a profitable fruit plantation has recently come under my notice on the estate of Roger Leigh, Esq., near Maidstone, and as the work has been done under the superintendence of one of the best growers of hardy fruit in the kingdom, Mr. Haycock—who is well known as the chief prizewinner in the classes for Apples and Pears at all the important exhibitions at which he competes—it may be usefully referred to. This orchard is 25 acres in extent, a slice taken from a wood which has probably not yielded the owner a pound since it has been in his possession, for unlike other portions of the extensive woodland of the estate it has not grown Spanish Chestnut for Hop poles, which is a profitable mode of arboriculture there; but on the contrary, like much other land in the same and other counties the timber and undergrowth were of such a nature as to be quite unremunerative. The land, however, now reclaimed, civilised, and cultivated will be of real value to the owner, will be locally advantageous in affording employment to the labourers of the district, and will contribute its quota towards supplying the dwellers in towns with health-promoting wholesome food. The portion of land taken from the wood is very small in comparison with the whole extent of woods—a small speck but a bright one in the landscape of the district. If such action were generally taken on large estates many a dull hillside might be rendered cheerful, and many acres of barren land made fruitful.

Than Kentish fruit-growers none know better how important and lucrative it is to prepare the land well for planting the trees. Not only do they find it true economy to expend a considerable sum in labour, but they also invest liberally in manure, so as to insure what is termed a "good start" for the trees—a matter deemed, and we may be sure not without good reason, of great moment. Further, the generous preparation of the land enables other crops both of bush fruits and roots being grown between the rows of the orchard trees, and these bottom crops alone give an excellent return on the outlay expended until the trees arrive at a fruit-bearing state. Even then undercropping is not always, perhaps not commonly, dispensed with, for it is certain that if the land is well tilled and manured crops of considerable value can be grown in fruit orchards when the trees are not unduly crowded and have tall stems or trunks. During last spring I had the pleasure, in the company of Mr. Barron of Chiswick, of inspecting a large fruit orchard which was well manured and tilled, which was occupied with Cabbages, earlier and better than any I had seen at the same date in open gardens. There were some acres of these Cabbages, and the crop must have realised a considerable sum, as owing to the severe and protracted winter the crops in open fields and gardens were greatly injured, and in many cases destroyed. On inspecting the fine full crop referred to Mr. Barron remarked that without seeing it numbers of people would never believe that such a result could be achieved under the circumstances. It is a fact, too, that under the trees of orchards in the Thames valley hundreds of pounds worth of flowers are grown annually for cutting for the London markets—such as Violets, Lilies of the Valley, Poet's Narcissuses, Moss Roses, &c.; so that in hardy fruit culture, where the land is tilled, even if the fruit crop fails the undercrop is of value; and if fruit trees are grown on pastures there is still the grazing to afford a return. The risk, therefore, of loss in planting in suitable soil and positions well-chosen fruit trees is practically nil, while the gain over an average of seasons may be relied on as much greater than can be realised by ordinary farm-cropping. There is consequently every inducement for landlords to plant fruit trees on certain portions of their estates by way of increasing the value of their property, improving the position of their tenants, and conferring advantages on the general community.

ment for landlords to plant fruit trees on certain portions of their estates by way of increasing the value of their property, improving the position of their tenants, and conferring advantages on the general community.

On Mr. Leigh's estate the wood and undergrowth referred to was first grubbed up. The greater portion was then thoroughly worked by the steam cultivator, and all the smaller roots possible were dragged to the surface, harrowed out, collected, and burnt. London manure (street sweepings and the like, costing 3s. or 4s. per ton) was then applied at the rate of 50 or 60 tons per acre, and worked in, and the trees planted. Standard Apples were planted in rows about 30 feet apart, and the same distance asunder in the rows. Down the centre, between each two rows of Apples, is a line of Plums or Damsons; and between the Plums and Apples are rows of Gooseberries and Currants, and in some cases Raspberries. Dwarf Apples and Plums were planted in the rows between the standards, and in the spaces between the rows of trees and bush fruits Potatoes, and in some portions Mangold Wurtzels were grown. Owing to the excellent preparation of the land, a free yellow loam, the permanent trees have made a capital start, and the crops between them have been excellent. The small fruits and dwarf Apples will commence bearing at once, and with Potatoes and other crops will produce a satisfactory return for the labour invested. Shortly the Plums will add greatly to the profits, and will continue profitable until the standard Apple trees approach their full size, when the Plums, &c., can be dispensed with, and the ground can be seeded down or cropped as desired. The ground will be manured and well worked yearly, about 3000 tons of manure being now in heap for the purpose. This liberal manuring for fruit trees might frighten many people, but it does not frighten Mr. Haycock. The trees are in an exposed position, the land being worked about a foot deep, and not in a close garden in rich black deep soil, and hence the practice adopted; but further, it is found profitable to purchase sewage from the adjoining town, and to apply it to the bush fruits; it is poured to the roots at this season of the year, and is found to be of great benefit.

The standard Apple trees had their shoots moderately shortened after planting, and will need but little further pruning. The dwarf bush trees were, and will be, judiciously pruned in late summer to insure the maturation of the wood, healthy growth and early bearing. This miniature fruit farm has been planted with the best varieties of fruits obtained from Messrs. Rivers, Veitch, Bunyard, and others, and the land which for years has been practically worthless will shortly be the most profitable portion of Mr. Leigh's estate. Why cannot landowners in other districts adopt, on a scale more or less large, the same means of improving their property?—J. WRIGHT.

#### ECHEVERIA PEACOCKII.

THIS is frequently known as *Echeveria De Smetiana*. It is a much superior species to *E. secunda* or *secunda glauca* for all purposes, especially bedding purposes, and it is nearly, if not quite, as hardy as the latter. The form of the rosette is much better; the leaves are more erect, thicker, pointed, with a bright glaucous surface; the edges and tips reddish; when well coloured the latter feature is well marked. It grows very rapidly, and when seen dotted amongst the deep green *Veronica* repens it produces a pleasing effect. It can be as readily propagated as any species, provided it is handled properly. Select the smallest leaves and separate them from the stem as close as possible; lay them in a box or on a shelf in a moderate temperature, and they will soon first emit roots and afterwards buds, which should be pricked off carefully and thickly in pots and encouraged, using as soil loam, sand, and very finely broken potsherds in equal quantities; the result will be a fine batch in a short time. *E. agavoides* is another beautiful species, much resembling, as its specific name implies, a miniature Agave. The leaves are short, very thick at the base, abruptly tapering to the apices, of a sea-green colour, slightly glaucous, with the edges and tips deep chocolate brown; the rosettes grow to a good size, and when 5 or 6 inches across are very handsome. This species can also be increased in the same way as the last, being careful to select the small and young leaves, as the larger leaves do not yield anything like so high a per-centage of plants.—T.

BEGONIAS FOR BUTTONHOLES.—Few people, I think, know the value of Tuberous Begonia flowers for buttonholes. This

summer I have cut scores of blooms for that purpose. Mixed with Stephanotis bloom or Tuberoses they are very beautiful. For ladies' dress or as hair bouquets, three blooms of each, carefully arranged with a small frond of *Adiantum gracilimum* through the centre of the bouquet, and a frond of *Adiantum cuneatum* for the background, have a very chaste appearance. For gentlemen's buttonholes, one bloom with a bud attached I find the best. Anyone will find them far preferable to scarlet Geraniums, as they require no gumming and remain fresh the whole day. I have found the following varieties the best:—*Sceptre*, *Gloire de Nancy*, *Monarch*, *Lelia*, *Madame Oscar Lamarche*, *Marie Lemoine*, *Raphael de Smet*, and *Purpurea magnifica*. These grown under cool treatment have flowers of good substance.—B. HIGGATE, *Cuen Wood Trovers, Highgate.*

### THE CLASSIFICATION OF ROSES.

I FANCY there are difficulties looming in the distance on this subject; and it will be well, I think, for all Rose-growers, at least all Rose-exhibitors, to ponder over and digest the matter thoroughly before it comes before them in a practical form. Hitherto for the purposes of exhibition we have been confined to two classes—the Hybrid Perpetuals, and Teas and Noisettes. Occasionally, but very rarely, a Bourbon has been introduced amongst the former; but *Souvenir de la Malmaison* is about the only one that we find in company with them, and it is not very often, especially in the Rose-showing season, an exhibition Rose giving its best blooms in the autumn. But during the past few years Cheshunt Hybrid has been very frequently exhibited amongst the Teas and Noisettes, and great dissatisfaction has been expressed thereat, as it has in so many instances spoiled the evenness and symmetry of a stand. I am quite willing to allow that it is a very good Rose, hardy in constitution, vigorous in habit, and continuous in blooming. But a Tea? No. It may have, and probably has, Tea blood in it, but the Hybrid Perpetual blood is so much stronger that it certainly ought not to be permitted to be placed amongst Teas or Noisettes. Then we have other Roses from both sides of the Channel: *Madame Alex. Bernaix*, *Carmes*, *La Coquette*, &c., from France, and the pedigree Roses of Mr. Bennett of Stapleford on this side of the Channel. In some lists these Roses are classed amongst Hybrid Perpetuals, in others they have a separate class allotted to them, as Hybrid Teas. Against this latter plan I see very grave objections. There are many other Roses which have evidently Tea blood in them of some sort or other. Take, for example, *La France*; no one, I think, can doubt its possessing this, but I think we should very much doubt *Mons. Guillot's* statement that it is a pure Tea. The whole contour of the flower is so different from any of the Teas, it is so much fuller and larger, that we may well call in question this statement and wonder why he has, after so many years, transferred it from the H.P.'s to the Teas. Then, again, *Capitaine Christy* has unquestionably Tea blood in it, but no one has as yet proposed transferring that to Teas, while a Rose I saw exhibited by Lacharme at Brie was assuredly a cross between *Sombreuil* and a Hybrid Perpetual. Who, then, is to decide as to which class these are to be shown in? Then, again, there are Mr. Bennett's pedigree Roses; some of these have more Tea blood in them than others, while some are hardly distinguishable in growth and foliage from many Hybrid Perpetuals which we already have in growth. Are these, then, to be classed according to the statements of the raiser or according to the appearance of the flower and foliage? One can easily see to what endless confusion this would lead, how difficult it would be to adjudicate stands, and how many disqualifications would be called for on account of erroneous setting-up. I think, therefore, that before long the National Rose Society will have to take the matter up, for it is quite as important as that of "Too Much-alike Roses," on which I have received a large number of replies, and hope very soon to give the outcome of the letters which I have received.

My own judgment, which I humbly submit to Rose-growers and exhibitors is this: That there be as hitherto but two classes, Hybrid Perpetuals and Teas. In the former class I should allow all Roses to be exhibited that have any claim to that character of second blooming, whether they are hybrids of Teas, Bourbons, or any other blood; in fact those contained in the nurserymen's catalogues of autumnal Roses. If any of the Hybrid Teas are found worthy of this company they will no doubt be exhibited amongst them. But independently of anything else, it would be giving them a false status if they

were to be exhibited as a separate class and only had to compete with one another.

With regard to Teas, I am almost inclined to think that I should rigidly confine this class to Teas properly so called. "What!" some will exclaim, "exclude Noisettes? Shut out *Maréchal Niel*?" Well, yes. *Maréchal Niel* has so generally the post of honour assigned to him of being exhibited by himself that he may be left to take care of his own honour, and there are very few of the other Noisettes ever shown in a stand of Teas; and does not a large bloom of *Maréchal Niel* or a cluster of *Céline Forestier* destroy the evenness of a stand? Instead, however, of shutting them out altogether I would prefer giving them a place in my first division as autumnal Roses. I think the Teas are so especially lovely for their refinement that I personally dislike anything that interferes with this. Many persons rapturously look forward to crimson Teas. Let me confess that I do not indulge in the rapture. A great beauty to my mind in a Tea is the delicacy of colouring—the beautiful tints of salmon, peach, apricot, rose, yellow, white, and copper so marvellously mixed together, so delicate and refined, and this would be wanting in a stand where crimson was present. It is not the size and shape of Cheshunt Hybrid that alone make it out of place in a stand of Teas, but its colour also. The objection will, I have no doubt, be present to many minds; but then how much of sameness there must be! Yes, there is a sameness, but it is one of beauty; but with the variation of form that there is in the class and the wonderful mixture of colour no one, I think, will complain much of sameness who really loves a Rose.

Having set the ball rolling I hope that others will take it up, and that out of the multitude of counsellors there may come wisdom.—D., *Deal.*

### KITCHEN GARDEN CROPS FOR 1880.

THE present is an excellent time to arrange the kitchen garden crops for 1880. The common plan of treating all ground alike and arranging the crops when it is time to put them in in spring is not to be recommended. In gardens where the soil is all the same this might pass, but unfortunately there are few gardens with a uniform good and deep soil, and therefore it is always best to arrange the crops to suit the quarters. Many soils which have never been trenched, but only surface-dug, will not produce good Parsnips, Carrots, or Beetroots. Trenching to the depth of 2 feet or more would frequently make a great difference to many crops, but at the same time a piece of ground which requires trenching must be studied. We once knew a gardener who went to a place where the garden had never been trenched, the only tillage done being to dig plenty of manure into the surface to the depth of not more than 10 inches. The new comer had all the garden trenched 2½ feet deep the first winter, and next season scarcely a vegetable would grow in the garden, as the subsoil which had been brought to the surface was so unsuitable, and it was some years before vegetables were produced in the same good condition as formerly.

Of course in such cases trenching will have its advantages in the end, only it should be studied at first, and to prevent the operation from interfering in any way with the supply only one piece or quarter should be done annually. Another good way is never to bring bad subsoil to the surface, but trench it down to the bottom as before, and cover it with good surface material. Some parts of the kitchen garden are very stiff and sterile, but we are annually improving this by double digging and working large quantities of old vegetable refuse to the bottom. By this means in a few years we shall have a deep rich soil in which any vegetable will grow luxuriantly. In arranging the crops for next year Parsnips, Carrots, Beet, and such roots must be in the deepest soil.

For many years the Carrots in our garden were poor and small. Last autumn about this time a good sprinkling of gas lime was thrown over a piece of ground and dug in. Carrot seed was sown on this piece in spring, and the results were most satisfactory. Now we are making ready another piece for next year. Next spring Parsnips will be sown on the piece from whence the Carrots have been taken, Onions will follow Celery. When the Celery is cleared the ground will only be dug up roughly. Before the Onions are sown a quantity of manure will be forked in the surface. After Celery a sprinkling of gas lime will be dug in to kill grubs, &c.

Any kind of lime is excellent for all old wormy or worn-out soils, and gas lime might be more often used than it is, only it

must be used in small quantities, and placed in the ground some time before the crop—that is to say, dig the gas lime in now, and the ground will be in excellent order for any crop in the spring. At one time we dug all manure into the ground in autumn and winter, and this was the easiest plan, but now we do not, as a rule, turn any dung under the soil until just before the crop is to be planted, and we think this produces the best results.—A KITCHEN GARDENER.

#### CARNATIONS AND PICOTEEES.—No. 11.

THE present season has been generally against Carnations and Picotees. From all quarters we hear that the young plants have no roots. I think that this rootless condition is owing to the parent plants starting into active root growth after the layering was done, the result being that the layers have continued to be nourished by the parent plants instead of producing roots. I find in many cases that the roots of the parent plants have hardly reached the sides of the pot. However, in high bleak situations I see no better plan than was adopted by an old grower who used to reside on one of our high Yorkshire hills. At a certain time he took off the layers, rooted or not: those not rooted he inserted thickly either under glass in a bed composed of soil from the pots or else replaced them in the large pots, and standing them in cold frames. After this the lights were placed over them and allowed to remain until spring, ventilating frequently by propping up the lights, but never removing them entirely. I have frequently obtained from him, in March, plants with a short bunch of roots half an inch long.

Those who have their plants firmly established in small pots will require to keep the lights propped up night and day in dry weather. As to the best position in which to place the frames, this will greatly depend on the shelter that may be afforded by trees, hedges, buildings, &c., as the more air is given to the plants the finer they will be. The aspect I have found the best is a south-eastern one, but then my situation is high, cold, and unless generally in the winter months. In clear warm situations I should recommend a north, north-east, or north-west aspect. Remove all dead or decayed foliage, water sparingly, and take care to prevent the water from penetrating into the heart of the plants.

Those who have a pit or cool house may continue placing in them such plants as may be required for next year. Those who have not the convenience of a pit or cold house may plunge the pots up to the rims in cocoa-nut fibre refuse or ashes, keeping the lights of the frame moderately close so as to encourage root-action.

Plants in beds should be frequently looked over. Any which may be loosened or thrown out of the soil should be placed firmly in the soil. Tall-growing varieties should be tied up to stakes to prevent them from being broken by the wind. If the weather continues fine examine the plants closely for slugs. If the weather proves wet and dull any plants that may look sickly should be covered with a bellglass. Empty all pots as soon as possible after the layers are taken off. The soil which has been used last season can be used again in the proportion of half old soil and half new. The reason I recommend the pots to be emptied at once is, that in late cold situations like mine the pots frequently break if the soil is allowed to become frozen in them. Any stems which may have pods of seed unripened on them should be cut off and placed in water in a dry room, where they can remain until the pods turn yellow, when they may be cut off and allowed to dry in the ordinary way.—GEO. RUDD.

#### NAPHTHA FOR SCALE.

REPLYING to "W. T. P. H." the Rev. W. F. Radclyffe writes as follows:—"The naphtha used was liquid. I did not measure the quantity, but simply poured some into the watering pots, and having stirred it used the syringe. The best remedy for brown scale, as suggested to me by the late lamented Mr. Rivers, is methylated spirits laid on the scale with a camel-hair brush. As to Ferns I know nothing; the same may be said of Chrysanthemums. I am not much in favour of violent remedies; sometimes the remedy is worse than the disease. If the querist has only a few plants, perhaps sponging with cold water or dipping the plants into a tub of water would cure the evil complained of. I have only tried the naphtha and water on Peach and Nectarine trees. I believe cold water would if constantly applied keep down our enemies. When trees are syringed the operator should not stand in the front of

the trees, as the enemy is usually under the leaf, but stand and syringe sideways. Scale on Peaches and Nectarines are on the points of the shoots, and are usually accompanied by ants. This year I have seen neither scale nor ants, only one red spider, and no mildew."

#### AGAINST HARD PRUNING.

"NOT so bad after all," was my sigh of relief after reading Mr. William Taylor's long-promised critique on my article on the summer pruning of fruit trees, which appeared in the number he has quoted—namely, of July 31st. Four months is a long time to wait for a verdict; but being conscious that I had not seriously sinned against the tenets of good practice in fruit culture, I was not troubled by the thought that the sentence would be a severe one, and it is even more mild than I anticipated.

The importance of the subject in hand is so great and withal so seasonable, and the tone of your correspondent's letter is so excellent, that it is, I presume, for those reasons his communication was accorded the post of honour in the Journal, rather than as editorial sanction being given to all that he has said in relation to the subject. Glad am I that the merit of the paper has been thus recognised, for it is one that may be read with advantage by all controversialists, not excepting, if I may be permitted to say so, some of our ecclesiastical friends.

While there are sentences in Mr. Taylor's article on page 399, the correctness of which I shall certainly question, there are only about two words to which I really object. I am described as a "formidable opponent." Now I disclaim being an opponent at all; and as to being "formidable," I cannot accept a compliment, however honestly given, that I feel is not merited. I had rather be regarded as an assistant to Mr. Taylor than as an opponent of him. Our objects are identical—namely, seeking to promote and improve the culture of hardy fruits; and there is far less difference in our views on attaining the desired end than is shown on the face of the article quoted. As to either one or the other getting the best of the argument that is, and I say it with all the emphasis possible, to me personally a very secondary matter.

Although there are one or two which I regard as vulnerable points in Mr. Taylor's "case," rather than seizing on them at the outset I prefer first to controvert his premises. As all readers of the Journal must admit, your correspondent's perceptive faculties are the reverse of dull, yet he has quite missed the real point and scope of my article which he has so skilfully dissected. I daresay he has read that article more than once, yet it is just possible that he made his promise of "attack" rather prematurely. I ask him to read it again, and he will, I think, see with other readers that the real nature of the question propounded is not an advocacy of excessive pruning as such, nor of pigmy *versus* orchard fruit trees, but of summer *versus* winter pruning of fruit trees generally, not even excepting, for they were specially mentioned, of wall trees. Further, the mode of procedure that I advised, and the soundness of which I am as conscious as ever, as I am fortified with results that have proved it sound, was made under special circumstances—namely after three, or in many places four, and in some five, unfruitful seasons, and during an abnormally dull and wet summer.

"WILTSHIRE RECTOR" recognised my point and object in a reference to my letter, and possibly, as I know some others did, carried out in such trees that needed assistance the practice advocated. In my communication I plainly stated that "I am not an advocate of an extreme course of summer pinching and pruning of all trees under all circumstances." Is not that clear enough? Then take the next line—"I do not adopt the practice of crippling the growth of young trees, and therefore am unable to rejoice with Mr. Peach on the conspicuous precocity of his young three-year-olds." That is to my mind more condemnatory than laudatory of "pigmy" trees. I stated that "one of my tenets on the culture of fruit trees is that a tree should be allowed to attain a size capable of maturing the fruit without any great strain on the tree's resources before it is encouraged to produce a crowded crop." Is that "horticultural millinery"? Whether it is or not, I nail my colours to the mast and ask my friend to fire away at them. I went further, and asserted that "if a tree will bear without any great amount of pruning I can very contentedly let it alone." Is that an advocacy of "hard pruning"? Your correspondent quotes my remark that there were in the last week in July "thousands of so-called pyramid and bush fruit trees into the centres of which the



light can find no entrance, and leaves and spurs are in semi-darkness"—quotes it to confirm it. He then observes that we differ about the causes. I suspect he there makes a mistake; and I am certain in the next line he is in error when he states his opponent (myself) "says they are pruned too much." When and where have I said it? What I said was this, that the absence of fruit for four or five years had caused many trees to grow exuberantly, and the growth made in semi-darkness, as admitted by Mr. Taylor, was essentially unfruitful in its nature. He equally with myself admits the evil; but there is this difference between us, that I suggest a remedy, while he appears to prefer to let the evil grow.

Pruning an exuberant tree, says your correspondent (who means winter pruning), affords only temporary relief, like cutting one's corn and still wearing the small shoe which caused it. If the foot had been allowed to expand the corn probably would not have come. Very true. The force of that sentence lies in the "if"—a very awkward little word, but sometimes useful. I may with equal fairness say that "if" the trees had been fruitful instead of barren during the past few years the evils of overcrowding and succulent unfruitful growth would not have been present. But they actually existed. If a soldier has a limb shattered in action do the surgeons sit down and argue the point in this manner?—If the man had stayed at home this would not have happened; and if there had been no war the case would not have been brought before us. No, the evil is before them an admitted fact, and instead of discussing the cause they promptly apply the best remedy in their power, even if that remedy is amputation.

I am thoroughly convinced of the great evils of severe winter pruning when the object desired is to produce healthy, matured, fruitful wood. I know by much experience that the knife improperly employed is the prime cause of overcrowded fruit trees, and I have for a long time ceased to use it to any great extent on trees during their season of rest; but thinning out the branches of overcrowded young fruit trees towards the end of summer is quite another thing. That practice rightly performed is sound practice, and during a season like the present has most certainly effected a great improvement in the condition of many fruit trees. It is well if the trees required no such aid; but as Mr. Taylor knows very well, and has admitted, many trees were in a very different condition two or three months ago, and he leaves them by asking, "Whose fault is it?" Well, never mind whose fault it is. The trees required assistance, and instead of seeking to fix the fault on anyone—a thankless, and under the circumstances an impossible task—I endeavoured to point out a remedy, and your correspondent has certainly not convinced me that I was wrong in doing so or that I suggested a wrong mode of procedure.

I am a great admirer of standard Apple trees on the Crab stock. They are the most useful of all trees for supplying the markets with fruit, but I cannot condemn dwarf trees on free-growing Paradise stocks. I do not mean stunted pigmies, but trees such as a short time ago I could have shown to Mr. Taylor with two bushels of fruit on each, while the orchard trees, young, middle-aged, and old, not a hundred yards from them were barren. I will not now incite controversy by suggesting what I think is a reason for the difference, but simply state the fact as showing that I at least have some reason for saying a good word for bush Apple trees pruned in summer but not in winter.

Many readers had not the privilege of seeing the finest hardy fruit show of the year at Hereford. I presume that fruit from dwarf-grown and regularly pruned Apple trees was staged against fruit from unpruned standards. Which won? The answer to that question shall be my answer to Mr. Taylor's remark relative to that phase of the subject mentioned in his letter.

I should like to refer more fully than I am able just now to the mode recommended for planting standard Apple trees on meadow land. I know there is rich alluvial land on which the plan will answer very well, but I also know equally well that there are miles of country where the soil is shallow and the rainfall low, where the prescribed mode of planting would not answer at all. The result would be this, the knife being thrown away as advised—that many of the trees would form fruit buds from the base of the extremity of the shoots, the terminal bud also being a fruit bud. What then? Free-growing healthy trees capable of producing serviceable crops—no, but trees, and I have seen many of them, that can only be described as pigmies on stilts.

I have more to say on this question, which is an important one, but cannot say it now, and I dare say my able coadjutor will give me an opportunity of returning to the subject.—  
A NORTHERN GARDENER.

### A GERMAN ELECTION OF ROSES.

THE object of this election is to reduce the four or five thousand varieties of Roses at present grown in our gardens to a limited number of really valuable varieties, to publish their names, and to recommend their cultivation. All answers to the questions given below should be sent in during November and December, 1879, post free to my address, and be accompanied by the distinctly written signature and full address of the sender, in order that I may communicate the result to him. Reports reaching me after the end of December would be too late to be of any use. To each variety should be added if possible the name of the raiser and the year of its introduction. The required number of varieties should on no account be exceeded, and it is particularly requested that correspondents will name Roses of sterling merit only. To further this undertaking I earnestly solicit the horticultural press to publish lists of questions in their columns, the honorary secretaries of all the horticultural associations to submit them to the members, and all who are interested in the cultivation of the queen of flowers to assist as much as possible. The printed result of this election of Roses will be communicated gratis and post free to all the horticultural papers and all correspondents who have taken part, and to those only, in order not to increase unnecessarily the expenses of this undertaking, which are borne by the Wittstock Horticultural and Agricultural Society.

#### LIST OF QUESTIONS.

Name and occupation of the correspondent, address, and date.

I.—Which are the three best Roses as regards form, substance, habit, and scent in each of the following colours?—A, Hybrid Perpetuals and Bourbon Roses—*a*, pure white; *b*, tinted white (pale flesh-colour); *c*, pale pink or light rosy; *d*, bright pink or deep rosy; *e*, carmine; *f*, scarlet and vermilion; *g*, purple and crimson; *h*, dark maroon or brownish; *i*, violet; *k*, striped. B, Tea-scented Roses and Noisettes—*l*, pure white or slightly tinged (three Roses); *m*, pink (rosy); *n*, tinted pink; *o*, pale and bright yellow; *p*, yellow tinted.

II.—Which are the three most beautiful Moss Roses?

III.—Which five varieties of Roses are the greatest favourites and the most generally cultivated in the district of the correspondent?

IV.—Which five Roses are distinguished by—*a*, uninterrupted blooming; *b*, superior scent; *c*, hardiness?

V.—Which five Hybrid Perpetuals are the freest bloomers—*a*, for the summer; *b*, for the autumn?

VI.—Which are the ten best Roses for forcing?

VII.—Which five varieties are best adapted for cultivation in rooms?

VIII.—Which are the three most beautiful pillar Roses?

IX.—Which ten novelties from 1873 till 1878 are of such remarkable beauty that their cultivation and distribution can be recommended without the slightest hesitation?

X.—Which are the best ten English-raised Roses? I refer to such Roses as have been raised by Messrs. W. Paul, G. Paul, Cranston, Keynes, Turner, and Bennett, all of whom have raised Roses of the first quality, to which even French raisers and rosarians like Messrs. Guillot fils, A. Levet, Jean Sisley, S. Cochet, Camille Bernardin, &c., could not refuse admiration. The English Rose-raising is fully equal to French and more honest, for the value of a new Rose is there fixed not by the raiser but by the National Rose Society in public competition at the Rose shows.—FRIEDRICH SCHNEIDER, *President of the Horticultural and Agricultural Society, Wittstock, Germany.*

### PRIZE CARDS AT EXHIBITIONS.

THE horticultural shows for the past year are now rapidly drawing to a close, and while we consider the disadvantages exhibitors have had to contend with during the present sunless and cold season, we may safely venture to say the majority of exhibitions have not been less attractive than in past years; some have even considerably improved. The earlier shows of the year were certainly short of fruit, owing to the lateness of the season and the want of sunshine; the quality, too, was not quite equal to that of previous years, yet other exhibits at the same shows were wonderfully attractive. Flowering

plants on the whole this year were good, and could not well be surpassed in the most favourable of seasons. But it is not altogether upon the exhibits of past shows that we are writing, as we wish to refer to the different systems of placing prize cards on the various exhibits after the judges' decisions. Each society appears to have its own system, and some we must confess are very imperfect. Not unfrequently have we seen many blunders occasioned by the method of carrying out such work and the delay in affixing the prize cards. In some cases the judges are followed and the cards written after their decision, in others they are all written in the secretary's tent and then conveyed to the exhibits. These systems not only entail a large amount of labour on the day of the show, but cause much delay and frequently annoyance. At several shows we have attended this year we have seen some very unsatisfactory systems practiced, and the public admitted before half the cards were up. This is not only disappointing to the public who are anxious to see who have been the successful exhibitors, but it makes the reporter's work hard and annoying.

There is abundance of time now for societies to consider these matters and make better arrangements for another season. The admirable system adopted at South Kensington is one that should commend itself to every society. It is free from the disadvantages above named, and when the judges have accomplished their work the whole is done, the prize cards up, and reporters able to follow and keep up with the judges. The prize cards should be written or printed previous to the show for every entry, and the class number and the number of each exhibitor should be placed on the back for the guidance of the judges. After staging, the card should be left the reverse side up, so that the exhibitor's number and class number can be seen by the judges. An assistant must follow each set of judges with small printed strips of first, second, and third prize, which should be gummed on the prize card. By following this system, and each set of judges having a copy of the "Field Duplicate Judging Book," which requires but little preparing and is very cheap, the numbers of the prizewinners are entered in as they proceed. As each class is finished the slip from the "Judging Book" should be torn off and sent to the secretary's tent for his books to be made up. Thus, when the judging is done all is done: no mistake need be made, and no annoyance occasioned.—W. BARNET.

## ACANTHACEOUS PLANTS FOR WINTER

### FLOWERING.—No. 5.

#### HYPOESTES.

THIS genus contains a great number of species, the greater portion of which are not deserving cultivation by the amateur. Those here quoted, however, are striking exceptions to the rule. They are nearly allied to *Justicia* and *Eranthemum*, the calyx-like bracteate involucre enveloping the flowers being perhaps one of the most distinguishing features. Culture the same as *Eranthemum*.

*Hypoestes sanguinolenta*.—This is a most desirable species. The extreme beauty of its variegation renders it a conspicuous object in the plant stove. Being first distributed under the name of *Eranthemum sanguinolentum* it may probably be more familiar to our readers by that appellation. Stems four-angled, attaining a height of about 12 or 18 inches, very sparingly branched. Leaves opposite, oblong obtuse, slightly pubescent on both sides, some 3 or 4 inches long and nearly 2 inches wide, deep green, with a broad purple band traversing each vein, so that when not in flower it is extremely ornamental. Panicle terminal, branched, and erect. Corolla twisted; tube slender; limb soft rosy-purple; throat white, spotted with dark purple. Native of Madagascar.

*H. aristata*.—A handsome species when in flower. In habit it assumes the proportions of a dwarf shrub, attaining a height of 3 or more feet. Stems almost terete, but sometimes bluntly four-angled. Leaves opposite, ovate, acuminate, slightly pubescent, some 3 inches long, and dark green. Flowers axillary, forming crowded spikes on all the branches. Corolla tube slender, rosy purple; lobes spreading and recurved, deep purple; the upper lobe striped and spotted. It blooms in January and February. Natal.

#### ANCYLOGYNE.

The species here introduced is, we believe, the only member of the genus in cultivation, but this is perhaps amongst the very finest member of the order yet introduced. It may be kept a second year with advantage. Pot in peat and loam, with a little sand added.

*Ancylogyne longiflora*.—A smooth undershrub of compact habit. Stems four-angled. Leaves ovate-oblong in shape, some 9 inches long, and tapering to a point, bright green above, paler beneath. Flowers arranged in a long terminal drooping branched panicle; they are cylindrical and tubular, enlarging upwards, about 2 inches long, and rich bright purple in colour. It blooms during March and April. Native of Guayaquil.

#### BRILLANTAISIA.

A genus containing but few species, the one here quoted being very handsome, and, as far as we are aware, the only one in cultivation. It is a rather coarse-growing plant, and should have a heavier soil than we have recommended for the majority of these plants. It should be cut back after flowering, and grown a second year.

*Brillantaisia ovarienis*.—This is a robust plant, having somewhat the appearance of a large-growing *Salvia*. Stems four-angled, pubescent. Leaves ovate-cordate, upon long petioles, coarsely toothed at the margin, and deep green. Flowers arranged in large terminal panicles. Corolla tube short; limb large and spreading; the lower lobes being deep violet blue, which renders it very attractive. Native of West Africa.

#### MACAYA.

The distinctive characters of this genus are not known to us. According to Lindley *Macaya* belongs to the order *Loasaceae*, but the plant here introduced to our readers' notice is certainly a member of the *Acanthaceae*, and has been dedicated to a well-known botanist, author of "*Flora Hibernica*," &c. It requires a moderate heat only, with an abundant supply of water both to the roots and from the syringe. Pot in loam, peat, and leaf mould, with a little sand added. It deserves to be cut back after flowering and grown a second year.

*Macaya bella*.—A tall-growing twiggy shrub. Leaves opposite, oblong ovate, smooth, coarsely toothed at the margins, some 4 inches long, bright green above, paler beneath. Racemes terminal, much longer than the leaves. Flowers standing all one way, or second, tubular, spreading upwards into a broad, campanulate, five-lobed limb; colour soft pale lilac, beautifully netted with purple. It is a truly charming plant, blooming during April and May. Native of Natal, by the River Tougat.

#### GOLDFUSSIA.

This family contains several very pretty species well deserving a place in the stove for the beauty and abundance of their flowers. Being plants of low growth we should prefer young spring-struck plants every year in preference to the old ones. The chief characteristics of the genus are thus defined:—"The flowers have two deciduous bracts, and are arranged in a head or spike, an unequally five-parted calyx, a funnel-shaped corolla with an unequally five-cleft limb, four didynamous included stamens with nodding anthers, and a subulate irritabile stigma."

*Goldfussia isophylla*.—A dwarf, compact, much-branched shrub. Stems four-angled, somewhat tumid at the nodes. Leaves opposite, narrowly lanceolate, acute, some 3 inches long, scarcely a quarter of an inch wide, deep green above, pale beneath. Flowers produced in small heads upon the apex of every branch, funnel-shaped, about 1½ inch long; colour lilac. It blooms in September and October, continuing several weeks in perfection. Native of the East Indies.

*G. Thomsoni*.—This is a somewhat looser-growing plant than the preceding, more sparingly branched; it is nevertheless a most desirable species. Leaves opposite, ovate-lanceolate, acuminate, slightly serrate at the margins; upper leaves sessile; lower petiolate, some 3 inches long, bright green above, tinged with dull purple beneath. Flowers produced in small heads on the apex of all the branches, tubular, spreading into a large funnel-shaped corolla of a deep violet blue. Native of Sikkim.

## VEGETABLES AT MESSRS. CARTER'S ROOT SHOW.

IN addition to the numerous classes provided for roots at the above Show, of which particulars will be found in another portion of the Journal, four classes were appropriated to collections of vegetables, Potatoes, and Onions, from gentlemen's gardeners, farmers, and amateurs. The principal class was that for twelve dishes of vegetables, and there Mr. Iggulden, gardener to R. W. Wingfield Baker, Esq., was awarded the premier position with remarkably handsome even dishes, including, in extra fine condition, Carter's Incomparable Crimson Celery, Snowflake Potatoes, Trophy Tomatoes, and Carter's Perfection of Beets. The second prize was adjudged to Mr. R. Phillips, gardener to Captain Jackson, who also exhibited fine dishes, the following being of unusual

merit—Carter's Perfection Sprouts, Carentane Leeks, and Acme Tomatoes. W. S. Baldwin, Esq., occupied the third place with fair specimens, Carter's St. Oysth Beet and Ayton Castle Leeks being well shown. For the best eight dishes of Potatoes, nine tubers of each, there were eleven entries, the competition being close and good. The chief prize was obtained by C. W. Howard, Esq., for excellent examples of Grampian, Snowflake, Brownell's Beauty, Schoolmaster, Carter's Main Crop, and International. The second and third prizes were awarded to J. Creed, Esq., and Mr. J. Clark, gardener to Lord Hastings, both of whom exhibited highly creditable collections. J. Creed, Esq., staged the best dish of Carter's Improved Magnum Bonum Potato, Mr. W. Iggulden and C. W. Howard, Esq., closely following in the order named. Fifteen exhibitors appeared in the class for twelve Onions of any variety, and the premier award went to J. Thorne, Esq., for neat and even samples, Mr. Phillips staging a collection but slightly inferior in merit.

### THE DEVON ROSERY.

Messrs. CURTIS, SANDFORD, & CO. are well known as large and successful cultivators of the Rose. A November trip into Cornwall and South Devon gave me an opportunity of visiting the birthplace of sweet and beautiful Devonians. The day after my arrival at Torquay I went round these nurseries with Mr. Sandford. His men were very busy lifting Roses, orders being very plentiful this season.

I noticed a fine breadth of forty thousand standards, not so good as in some previous years, but then last winter's frost was felt at Torquay as well as at Monckton Wyld. The dwarfs looked clean and healthy, especially those on the Céline stock: there were from ten to twelve thousand of these, including three thousand Gloire de Dijon. The demand for Roses on the Céline is greater than the supply. Mr. Sandford says he cannot do at all with the seedling Briar, and from what I saw of the plants on this stock something was clearly amiss, neither does he like the Briar cutting—not fibrous roots enough.

The soil is a lightish and somewhat gritty marl—not a bad soil; the climate everybody knows. No mulching or protection required in winter, although, as I said before, last winter's sting was felt. The nursery slopes on either side down to a little stream, which is convenient for summer waterings, but which would play havoc among my Rose trees in East Worcestershire during any ordinary winter. But at Torquay the only trouble from frost comes in spring when everything has well started into growth.

If all Roses were as popular as the Duke of Edinburgh the nurserymen would have a busy time of it. I saw here eight hundred of His Royal Highness on Manetti stocks in one piece. The grafting of Roses had commenced; there were eighteen thousand stocks all in pots ready to be operated upon.

Let me recommend visitors to Torquay to have a good peep at the Devon Roseries, any time from middle of May to middle of November, and they will be rewarded beyond anticipation.

—J. A. W.

### CHRYSANTHEMUM AND FRUIT SHOWS.

#### SHEFFIELD.

PERHAPS there are more Chrysanthemum shows in Sheffield than in any other town in the kingdom—private venture shows instituted by enterprising publicans, who take advantage of the attractions of the flowers to fill their houses with the "fancy." Fanciers of garden produce are numerous, and shows of some kind are held during almost every week in the year, the majority of them on Sundays. On Sunday last we were informed that probably as many as twenty Chrysanthemum shows were held in the town and environs—stands of blooms exhibited by anyone and from anywhere; blooms grown, or purchased, or begged by exhibitors, whose entrance fees added to the sums given by the landlords of the "houses" constitute the prizes. The Exhibition under notice is, however, of a very different character. It is the second autumn Show promoted by the Sheffield and Hallamshire Gardeners' Improvement Society—a Society that is receiving the support it deserves, for we are glad to see that it has as President the Rev. Canon Blakeney, D.D., Vicar of Sheffield, and such influential Vice-Presidents as Sir John Brown; F. T. Mappin, H. Wilson, W. F. Milner, Mark Firth, H. E. Watson, J. E. Caller, B. P. Broomhead, and D. Ward, Esqrs.

All the prizes were of an honorary character, no money, cups, nor medals being given to local exhibitors, but only certificates of merit representative of first, second, and third prizes in the various classes; yet a silver cup with other prizes were provided in the open class for twenty-four incurred Chrysanthemums, the object being to have blooms of a high standard of excellence from other districts. In this open class Mr. Tunnington, gardener to C. McIver, Esq., Calderstone, Liverpool, and Mr. Faulkner, gar-

dener to J. R. Leyland, Esq., Woolton Hall, Liverpool, competed, and astonished the gardeners of Sheffield and visitors to the Show by the size and magnificence of their blooms. Mr. Tunnington won the cup by six points with the finest stand we have seen this year, the majority of the blooms being fine in size, form, solidity, and general finish. Novelty, Prince Alfred, Empress of India, Mr. How, Golden Empress, Queen of England, Princess of Wales, Mrs. Heale, Beauty, Cherub, White Venus, and Isabella Bott, all high-class blooms; and the others, Hero of Stoke Newington, Sir Stafford Carey, Jardin des Plantes, Bronze Jardin des Plantes, Barham, Prince of Wales, Princess of Teck, Venus, Eve, Lady Hardinge, Mrs. G. Rundle, and Princess Beatrice were in admirable condition. Mr. Faulkner had one or two blooms perhaps superior to Mr. Tunnington's, notably Empress of India and the golden variety; and especially good, but not large, was Beauty, and the majority were of great merit and very fresh, but some too small—in fact they were not quite at their best, while Mr. Tunnington's as a whole were in the full zenith of beauty. Mr. Walker, gardener to B. P. Broomhead, Esq., was the premier local exhibitor, and secured third honours in the open class. Mr. Marsden, gardener to J. E. Cutler, Esq., had the chief prize in the local class of twenty-four blooms with small but extremely neat examples. Mr. Walker second, and Mr. Foggin third with very small flowers placed on very large discs of violet paper. Most of the blooms were shown on white paper, including Mr. Tunnington's, but not Mr. Faulkner's nor Mr. Walker's. It is not necessary to refer to the minor classes, nor to the plants, which were generally inferior.

Primulas were a prominent feature of the Exhibition, splendidly grown plants being staged by Messrs. Marsden, Walker, and Stimpson, gardener to J. Cravan, Esq. Mr. Woodcock, gardener to F. W. Mappin, Esq., was well in advance of other competitors with groups of plants and Ferns; with good plants tastefully arranged Mr. Cozens, gardener to W. Hutchinson, Esq., and Mr. Walker exhibited well and successfully in these classes. For hardy Ferns Mr. Radon was first with a choice collection.

Of the fruit staged, only the Grapes and a few Pears staged by Mr. Hall, gardener to Mark Firth, Esq., were superior. The exhibitor named secured the chief prizes for Grapes with fine examples of Black Alicante and for a collection of fruit. But the finest fruit contribution in the Show was the collection of Grapes not for competition from Mr. Abbott, gardener to C. H. Firth, Esq., including splendid bunches of Mrs. Pearson, Golden Queen, Alicante, Madresfield Court, Muscat of Alexandria, and Frankenthal. Mr. Abbott also exhibited his fine Pea Hallamshire Hero, referred to on page 344, and which was awarded a first-class certificate.

Mr. Clements, gardener to H. Wilson, Esq., exhibited plants, which were highly commended for superior culture, of Nepenthes, Maranta Massangeana, and Sonerilas; and Messrs. Fisher, Holmes, and Sibald B. Crossland, and Mr. Udale, gardener to H. Watson, Esq., were highly commended for large, well cultivated, and excellently arranged groups of flowering and fine-foliated plants that contributed greatly to the effect of the Exhibition.

The Exhibition was held in the Cutlers' Hall on Monday and Tuesday last, and was well attended; and the officials, including Mr. Woodcock the industrious Secretary, worked hard to render it successful, but with a better system much labour might be saved and more satisfactory results produced in affixing the prize cards and conducting the general routine duties of the Show. The Sheffield Chrysanthemum Show is yet in its infancy, but now the members have seen what can be done by high culture in producing grand blooms they are certain to profit by the lesson; and if the Society receives the support that it certainly merits, shows worthy of the great, busy, and wealthy town will be produced in the future.

#### SOUTHAMPTON.

The second Exhibition of Chrysanthemums, fruit, vegetables, and cage birds was held in the Victoria Skating Rink on the 18th and 19th inst. The Committee were most fortunate in procuring such an admirable structure, for the building was large, elegant, and light, the greater portion of the roof being constructed of glass.

The exhibits of horticultural produce were arranged on tables extending the whole length of the building, while the cage birds occupied the other portion. A few miscellaneous plants were placed around the sides and columns of the hall in a very tasteful manner. The schedule comprised forty-one classes, the first sixteen of which were allotted to Chrysanthemums, seven being open to all; two were for nurserymen only, and the remaining portion for gardeners and amateurs. In the whole of the classes there was very keen competition, and among the fruit and vegetable collections were some of the extremely good specimens. Following in the order of the schedule, in Class 1 the subscription challenge prize of £5, open to all England, was offered for twenty-four cut blooms of Chrysanthemums, distinct varieties, for which there were six competitors. The first prize was well won by Mr. Moorman, gardener to Miss Christy, Coombe Bank, Kingston-on-Thames, with a collection of large and handsome flowers, consisting of eight Japanese and sixteen incurred varieties. The back row of Mr. Moorman's stands were all Japanese—a very pleasing arrangement. The best varieties were M. Ardène

(very fine), Elaine, Fleur Parfait, Fair Maid of Guernsey (good), Bouquet Fait, Madame Lemoine, Beverley, Mr. Bunn, Beethoven, Lady Hardinge, Mrs. Dixon, Prince of Wales, Golden Empress of India, Mr. G. Glenn, White Venus, and Novelty (very fine). Messrs. Jackson & Son were second with the following among others:—Fair Maid of Guernsey, James Salter, Elaine, Bouquet Fait, Red Dragon, Prince of Wales, Mr. G. Glenn, Gloire de Toulouse, and Golden Beverley. Mr. Wills, gardener to Mrs. Pearce, The Firs, Bassett, occupied the third place; and Mr. C. Dear, St. Andrew's Lodge, Southsea, the fourth. For the most effective group of Chrysanthemums arranged with Palms, Ferns, and other foliage plants Mr. Wills was well to the front with a tastefully arranged group, amongst which were a fine Davallia Mooreana, some very well-coloured Crotons and Dracenas. Mr. J. Amys, gardener to the Hon. Mrs. E. C. Yorke, Netley Fort, gained the second honours. In the class for the best collection of Chrysanthemums, arranged in a space 8 feet by 5, Mr. Allen, gardener to J. Bailey, Esq., was deservedly awarded the premier prize for a group displaying much taste in arrangement. Mr. E. Wills was a good second, but his collection was somewhat crowded. Prizes were offered for six Pompons, but these were poor. Mr. Thomas, gardener to R. B. Scott, Esq., was awarded the first prize for a single specimen plant.

For twelve cut blooms, incurred, Mr. Moorman was a good first, Mr. Wills second, and Mr. Allen third. There were seven collections staged. For twelve Japanese there were only two collections, Mr. Moorman and Mr. Wills being awarded first and second honours respectively. The plants and cut blooms in the nurserymen's classes were very poor. For twelve plants, not less than six varieties, Mr. Thomas was awarded the first prize for large, loose, and untrained plants, but exhibiting some very good quality flowers of the "Randle" type. Mr. Amys was placed second with better trained plants, but the flowers were not quite so good. For twenty-four cut blooms in the gardeners' class there were several collections staged, Mr. Wills outdistancing all other local growers; Mr. Thomas secured the second prize; and Mr. West, gardener to J. R. Wigram, Esq., the third place.

Table decorations were tastefully arranged by Miss Fraser, Mrs. Kingsbury, and Miss Chamberlain, who were first, second, and third respectively. Several meritorious groups of miscellaneous plants, arranged in a space 10 feet by 7, were staged both by gardeners and nurserymen. The best in the gardeners' class came from Mr. Wills, and contained fine coloured plants of *Oreocniza undulatum* and *C. majestica*, good *Marantas*, *Dracenas*, *Eleocharis*, nicely flowered *Oxyphedra*, *Palms*, &c., the outer edging being composed of small *Ferns*, *Panicum*, and *Isolepis*. This was a very effective group. Mr. J. Amys occupied the second place, and had amongst his plants some good specimens of *Schizostylis coccinea*.

**FRUIT.**—This was, as we have already remarked, extensively shown. Some grand examples of Grapes were contributed by Mr. Johnstone, gardener to the Marchioness of Camden, Bayham Abbey, Kent. Mr. Johnstone was awarded the first prize for the heaviest bunch of Grapes (Syrian), a large bunch, and well finished. He was also first with two bunches of black, and third with white Grapes. Mr. Crump, gardener to H. Harris, Esq., Steventon Manor, Micheldever, and Mr. A. D. Christie, gardener to H. Woods, Esq., were also very successful prizetakers for Grapes. The last-named obtained the first prize for white Grapes (Bowed Muscat) of a real amber colour. Apples, Pears, vegetables, berries, plants, Primulas, &c., were all good.

We congratulate the Secretary, Mr. C. S. Fudge, who, with the hearty co-operation of Capt. Gibbs and a few others of the Executive, so ably carried out the arrangements of the Show. The "Field Judging Books" were used with great advantage here; and the system adopted throughout, even to the placing of the prize cards, is to be commended, and is worthy of imitation in other societies.

#### SHREWSBURY.

The second fruit and Chrysanthemum Show of this Society was held in the Music Hall on Thursday, November 20th. The show of fruit was an excellent one; the competition was very close, especially among the Grapes. The Chrysanthemums were numerous and good. The Pompons, however, would have been better in another week or two.

Specimen Chrysanthemums were well shown. For nine large-flowering varieties Mr. Farrant, gardener to Mrs. Juxon, Shrewsbury, obtained the premier award with very fine plants of *Empress of India*, *George Glenn*, *Golden Beverley*, *Mrs. Dixon*, *Lady Margaret*, &c. These were unquestionably the best plants in the Show. Mr. Farrant was also first with six standard large-flowering plants, well flowered and trained. Mr. Thomas, gardener to B. Burd, Esq., was first with six standard Pompons, very good plants well grown. Messrs. Oldroyd & Son, nurserymen, and Mr. Milner were placed equal first for six well-grown Pompons.

The cut blooms were excellent, especially those shown by Mr. Warrender, who was placed first with twenty-four (open to all England), the best amongst which were *Golden Empress*, *Elaine*, *George Glenn*, *Alfred Salter*, *White Beverley*, and *Mrs. George Rundle*. Mr. Milner was second with small but well formed blooms,

There was good competition for six Primulas, and some very good plants were staged. Mr. J. Jones, Cotton Hill Nursery, was first for six Cyclamens. He also exhibited, not for competition, one ball and two bridal bouquets in his usual style, which attracted much attention.

Fruit was particularly well shown. In the class for three bunches of black Grapes open to all England, Mr. McLean, gardener to Lady Louisa Cotes, Pitchford, was first with good bunches of *Black Alicante*; Mr. Williams, gardener to Rev. W. C. Kynaston, Hardwick, was a capital second with very even and well-coloured bunches of the same variety. The Judges must have had no light difficulty in deciding between these two rivals. Mr. Boddy, gardener to Viscount Boyne, was first with three splendid bunches of *Muscat of Alexandria*, and Mr. Purser, gardener to J. Watson, Esq., Berwick, followed. For the best collection of Grapes, not less than four varieties, Mr. Boddy was again first with good bunches of *Royal Vineyard*, *Muscat of Alexandria*, *Lady Downe's*, and *Black Alicante*; Mr. Kite, gardener to A. Maw, Esq., was a good second, and Mr. Pearson, gardener to Lord Berwick, third. Not less than 140 dishes of good Pears were staged, and about the same number of Apples, Messrs. Pearson and Lambeth taking the chief prizes.

#### GRAVESEND.

The annual Exhibition of this Society, held at the Milton Hall on the 19th and 20th inst., was fully equal to that of last year, and as usual reflecting much credit on all concerned. Mr. Phillips, gardener to Captain Jackson, Meopham, was the most successful exhibitor, being placed first in nearly all the plant classes. His four dwarf-trained specimens of *Mrs. Dixon*, *Mrs. G. Randle*, *Mrs. Sharpe*, and *Gloria Mundi* in the class for large-flowering varieties were particularly good. The flowers, although fewer in number than those carried by the plants which gained Mr. J. Boulton, gardener to B. A. Gibbons, Esq., Northfleet, the second prize, were much finer and well developed, and the foliage too was much superior. The best four standard-trained large-flowering varieties, staged by Mr. Phillips, consisted of *George Glenn*, *Mrs. Dixon*, *Venus*, and *Mrs. G. Rundle*. A good plant of *Mrs. Foweyth* gained the same exhibitor the first prize in the class for a single specimen; and he was again first in the corresponding class for a pyramid with *Golden Christine*. Mr. J. Boulton and Mr. R. Lambdin, gardener to J. T. Diamore, Esq., Gravesend, both showed excellent plants in the foregoing classes. In the gardeners' class for twenty-four cut blooms, incurred, Mr. W. Green, gardener to R. Dunbar, Esq., Greenhithe, secured the premier position with a good stand. Some of the best blooms were the *Empress of India*, *Golden Beverley*, *Prince of Wales*, and *Golden Queen of England*. The best twelve incurred blooms were staged by Mr. G. Fendred, gardener to S. C. Umfreville, Esq., Greenhithe, particularly noticeable among them being *Nil Desperandum*, *Gloria Mundi*, *Queen of England*, and *Beauty*. Mr. Fendred was also placed first with twelve cut blooms of Japanese varieties, all being good; and *Fulgore*, *Elaine*, and *The Sultan* especially so.

For a collection of fruit, not more than twelve dishes, Mr. J. Kitchingham, gardener to C. Spencer, Esq., Gravesend, was placed first with a creditable collection, Apples and Pears predominating. In the class for three bunches of Grapes, any variety, Mr. Green obtained the premier award with well-grown *Black Alicante*; the second prize being awarded to Mr. T. Wright, gardener to E. Bryant, Esq., Gravesend, for good examples of *Mrs. Pince*. Several good collections of vegetables were staged in the unlimited class. The attendance was good, especially on the first day of the Show.

#### EALING AND ACTON.

This Society held their autumn Exhibition of Chrysanthemums, fruit, and vegetables in the Drill Hall, Ealing, on Thursday and Friday last week. The weather was most wintery, snow falling heavily on both days of the Exhibition. The Show and the display of plants and flowers were most praiseworthy; Potatoes, Onions, and other vegetables, particularly the former, being unusually abundant and excellent. Several collections of fruit, particularly those from Mr. Hudson, gardener to H. J. Atkinson, Esq., Gunnersbury House, Ealing, were in prime condition. Several large groups of miscellaneous plants were exhibited, and added materially to the effective arrangement of the spacious hall. The large platform 22 feet by 9 was completely filled by a group of fine-foliage and flowering plants admirably arranged by Mr. Hart, gardener to T. Nye, Esq., Castle Bar, Ealing. The first prize was deservedly awarded to this very meritorious collection. Equal second prizes were awarded to Mr. E. Fountain, gardener to Miss Wood, Ealing, and Joseph Moore, Esq., Queen's Walk, Castle Bar, Ealing, which consisted chiefly of well-grown *Ferns*, *Chrysanthemums*, and fine-foliage plants. Mr. Thomas Petridge staged an admirable group, amongst which were several well-bloomed plants of that lovely and pure white Pompon Chrysanthemum *Midie*. *Marthe*, a variety most suitable for market purposes. There were also in this collection several plants of *Pteris straminea*, a variety very popular for market purposes, but otherwise seldom met with in large quantities.

**CHRYSANTHEMUMS.**—In the principal class for cut blooms

special prizes were offered of £3 8s., £2 2s., and £1 1s. for twenty-four blooms, eight to be Japanese and sixteen incurved. For this there were three good collections. Mr. Moorman, gardener to Miss Christy, was awarded the first prize for a highly meritorious collection; Mr. Clarke, Roehampton, being placed second, and R. Nye, Esq., Guildford, third, all exhibiting well. Several local growers competed in the many classes set apart for them, but the majority of the collections were not up to the standard. Messrs. C. Lee & Son exhibited several boxes of Chrysanthemum flowers, very many of them being of great substance.

The Society's first-class certificate was awarded to Messrs. Kelway & Son for a dwarf tufted form of Scolopendrium, almost as finely curled as good Parsley, named *S. vulgare* Kelwayi, and to Mr. R. Dean for *Calendula Meteor*, a very pretty Marigold. The arrangements were well carried out by Mr. R. Dean, the Hon. Secretary, assisted by his brother and some very active members of the Committee.

#### TORQUAY.

This Show was held on the 11th November, and proved in many respects very satisfactory. The prizes for collections of Chrysanthemums in pots were mostly divided between Mr. R. Hannay and Rev. J. B. Tomlinson. In the class for six Pompon Chrysanthemums, Col. Campbell of Villa Como secured the first prize with fair plants. In the nurserymen's class for twelve distinct varieties in pots Messrs. Curtis, Sandford & Co. were first with well-grown plants.

The cut flowers were most excellent. The Judges must have had some little difficulty in coming to a decision in several cases. In the open class for eighteen distinct large-flowered Chrysanthemums the first prize went to the Misses Carew, the second to Capt. Tucker. In the amateurs' class for twelve, first prize Mr. W. J. Watts; second Misses Carew. In this class some most excellent blooms were staged. Mr. Watts's were set up the best and were not so crowded, the black velvet-covered stage suiting the Chrysanthemums extremely well. In the other classes too much cannot be said in praise of the twelve blooms of Mrs. Dixon and twelve of Mrs. George Rundle exhibited by the Misses Carew and Mr. John Clements. The gardener is to be congratulated upon his success.

The fruit competition was not very close. The Rev. W. H. Gretton was first in most of the amateurs' classes for Pears and Apples, he staged good collections. Judges are not infallible, or those at Torquay would never have decided in Class 59 as they did. The prize was for "six fruit of any other sort." Mr. Gretton exhibited very well indeed the delicious Doyenné du Comice, but was placed second to Mr. Retty, who elected to show six not very large Belle de Jersey. Some people may prefer a stewing Pear to a luscious dessert fruit.

In order to encourage nurserymen to send fruit to this Show the Committee offered two prizes, £3 and £2 respectively, for best collections of Apples and Pears, all varieties to be correctly named. Messrs. Cranston & Co. had entered for this class, but when their representative found that a Jersey fruiterer had entered he withdrew from the competition. I believe the Judges expressed an opinion that Jersey and foreign growers should not be allowed to compete on the same terms with English growers. Mr. Pluck of St. Heliers, Jersey, received the first prize for a collection consisting of thirty-four varieties of Pears and twenty-eight of Apples. It was certainly an excellent collection. Messrs. Cranston exhibited their fruit, which considering the past season was worthy of the well-known firm.

There were some good dishes of vegetables shown, including some marvellous Leeks. The attendance at this Show was very large, the room being quite uncomfortably crowded.—J. A. W.

#### NOTES AND GLEANINGS.

IN reference to the recent FALL OF SNOW Mr. B. Inglis writes as follows:—"After six weeks of beautiful autumn weather (during which very little over 1 inch of rain has been registered) the Cuckfield district of Sussex was visited at the end of last week with a very heavy snowstorm. About 4 inches fell on Thursday morning the 20th, much of which thawed during the day. It again commenced snowing at half-past eight on Friday morning, and before eleven o'clock 3 inches had fallen. It continued to snow during the day and until midday on Saturday, when the average depth would be about 15 inches. Not less than 20 inches had fallen in the three days." A correspondent writing from Edgware, Middlesex, states that on the 16th inst. the thermometer registered 2° of frost, and on the 23rd inst. 21°. We also hear from several other localities of equally low temperatures.

—AT a meeting of the Executive Committee of the NATIONAL ROSE SOCIETY, held on Tuesday last, it was announced that the following special prizes would be competed for at the exhibition to be held at the Crystal Palace on Saturday, July 3rd, 1880:—1, Silver challenge cup (general

competition), given by Messrs. Cranston & Co., Hereford. 2, Silver cup, value ten guineas, given by John Hollingworth, Esq., Maidstone, for the best box in Class 1, seventy-two varieties, nurserymen. 3, Silver cup, value six guineas, by Thomas Hollingworth, Esq., Maidstone, for the best eighteen Teas (nurserymen). 4, Silver cup, value ten guineas, by R. N. G. Baker, Esq., Heavitree, Exeter, for the best eighteen Roses (nine Hybrid Perpetuals and nine Teas), amateurs. 5, Silver cup, value ten guineas, for the best stand of Cheahunt-raised Roses, by Messrs. Paul & Sons, Cheahunt. 6, Piece of plate, value three guineas, for the best stand in Class 14 (suburban Roses), by Edward Mawley, Esq., Hon. Sec. 7, Five pounds for the best seedling Rose not yet in commerce, by G. P. Hawtre, Esq., Langley, Slough. 8, Silver-gilt medal, by the proprietors of the "Journal des Roses," for the best twenty-four Roses, three of each, one fully expanded, one half open, and one in bud.

—GREVILLEA FILICIFOLIA is a much superior form to that usually grown—viz., *G. robusta*, which is, by the way, a plant we cannot do without, but when you see the two forms standing side by side it is no difficult matter to give an opinion of their respective merits. The leaves of *G. filicifolia* are much more finely cut, and rather more graceful in their disposition. Plants when well grown are very handsome. Most likely it is a selection from *G. robusta*, therefore we must not expect to have it in such quantities as we do that plant, since seed is not obtainable. It is, however, very easily grafted on *robusta* stocks, and greater success is realised if the leader of the stock is not cut off entirely. It was, we think, exhibited by the late firm of Rollissons at Tooting, but never received the attention it richly merits.

—IN our report of the CHRYSANTHEMUM SHOW at the Royal Aquarium Messrs. Dixon & Co. were accredited with having received the first prize, a silver cup, in the class for a group of Chrysanthemums; whereas Mr. Hall, gardener to W. Stevens, Esq., Tulse Hill, was the honoured individual, Messrs. Dixon receiving an extra prize. The mistake was due to the unnecessary delay and inefficient system adopted in affixing the prize cards to the several exhibits. Mr. Hall's plants were exceptionally good, well trained, compact, and well flowered. A specimen of Faust was remarkable for the regularity and substance of the flowers, which were well backed up with foliage. Mrs. Dixon, Mrs. Haliburton, Julie Lagravère, and St. Michael were also in fine condition. Mr. J. Balaam, Vine Nursery, and Mr. J. Rickett, gardener to Mrs. Bowerbank, Stoke Newington, followed in the class with much inferior collections. Mr. H. Cannell, Swanley, exhibited an excellent stand of Zonal Pelargonium blooms, which were highly commended.

—THE CAMELLIAS in the Victoria Nurseries, Upper Holloway, give promise of a grand display of flowers, for the buds are uncommonly numerous, and the general health and vigour of the plants all that could be desired.

—IN the Orchid house at Kew that lovely little species *IONOPSIS UTRICULARIOIDES* is now flowering. This most interesting plant would scarcely be taken for an Orchid by a casual observer, so distinct are the flowers from the normal type, resembling, as the specific name denotes, the Utricularia, and they appear at a glance by no means unlike the common Lobelia in form. The flowers are small, and are borne in a paniculate inflorescence; they have a flattened two-lipped appearance, the lower lip protruding and two-lobed. The colour is white, delicately tinged and streaked with pale rosy lilac. The plant is a native of Trinidad, and was introduced to this country about 1822, but is rarely seen in cultivation.

—AMONG many other plants that Messrs. Cutbush & Son of Highgate and Barnet grow remarkably well are DOUBLE WHITE PRIMULAS, of which there is a fine batch at their Highgate Nurseries. These beautiful plants when well grown are invaluable for decorative purposes at this period of the year. We also observed a semi-double variety with flowers of a delicate blush tint: it appeared to be of good compact habit, and profuse in flowering.

—HAZELS AND FILBERTS have been unusually abundant, the kernels remarkably large and well flavoured, a small farmer himself gathering 2 stones of Hazel nuts and selling them afterwards (Mid-Lincoln). In stone fruit this year, especially Apricots, the kernels were also very large, and much more frequently double than in other years. The Scotch Champion POTATO has been most successfully grown in this neighbour-



hood. It is very sound, deep-eyed, firm, but deliciously floury in texture, bursting up like a flourball when steamed, but not bearing boiling.

— A SPECIMEN of that attractive Myrsinaceous plant *JACQUINIA AURANTIACA* is bearing numerous clusters of its dark orange-coloured fragrant flowers in the Palm stove at Kew. This species is a native of the Sandwich Isles, whence it was introduced in 1796. The leaves are coriaceous and dark green, the flowers being borne in small clusters on the branches.

— THE EUPHORBIA.—Some few years since a survey was being carried out in Natal for the Colonial Government, during which it was discovered by one of the officers engaged on the work that when certain plants belonging to the natural order Euphorbiaceae were cut with the clearing knives the exudation from the plants adhered firmly to the blades, and was very difficult to remove. It was, moreover, found that the knives so coated did not rust, and this led to further experiments being made with a view of utilising the gum as a preservative material. Iron plates were coated with the gum and subjected to immersion in the waters of South Africa, which are stated to be proverbial for their foulness and for the rapidity of the growth of vegetation. The Euphorbia in Natal grows in close contiguity to the seashore, so that there was ample opportunity for securely testing its value as a protective covering for iron against corrosion and marine growth. The experiments proving perfectly successful, it was then sought to put the discovery into a practical form. To this end the gum was dissolved in a preparation of spirits, and this was found to be a ready means of applying it as a coating for ships' bottoms and for ironwork generally requiring such protection, the spirits evaporating and the gum being left on the surface of the metal. With this preparation experiments were made a few years since by Sir Andrew Clarke, C.B., who had a sheet of iron coated with it and placed in the waters in Her Majesty's dockyard at Chatham, where anything immersed becomes rapidly fouled. At the end of two years the sheet of iron was taken out and was found to be quite clean, and free from fouling and corrosion. The composition has also been successfully tested in Africa against the ravages of the white ant. This success is attributed to the circumstance that the gum of the Euphorbia, which forms the base of the fluid, is of such an intensely bitter nature that it paralyses the efforts of all insects to attach themselves to it, or to bore into any substance coated with it. These successes have led to its adoption in practice for the purposes above indicated, and it is now being introduced in England. Applications of this composition give a glossy coating alike impervious to air or moisture, while, according to results, its own peculiar protective property remains unimpaired.

#### THE METEOROLOGICAL SOCIETY.

THE first meeting of this Society for the present session was held on Wednesday, the 19th instant, at the Institution of Civil Engineers, Mr. C. Graeves, F.G.S., President, in the chair. The following gentlemen were elected Fellows:—Capt. C. K. Brooke, Rev. E. Carr, M.A., Capt. R. A. Edwin, R.N., W. B. Fawcett, C. J. Harland, J. Lucas, F.G.S., H. Mellish, G. B. Nichols, The Earl of Northesk, Dr. J. Robb, T. H. Walker, and C. L. Wragge, F.R.G.S. The reports on the Phenological Observations for 1879 were read—the botanical being by the Rev. T. A. Preston, M.A., F.M.S., the entomological by the Rev. C. H. Griffith, B.D., F.M.S., and the ornithological by J. Cordeaux. With the exception of a few days in the earlier parts of February and of March the whole of the year 1879 has been characterised by a temperature almost invariably below the mean, accompanied with much wet and little or no sun; the effect on vegetation has been consequently very great. Foliage has as a rule been excessively luxuriant and dark, "forming the most remarkable feature of the year;" but rarely has fruit been able to ripen, and the second shoots have frequently been weak and unhealthy. Flowering has invariably been very late, so much as a month in some districts, the hay harvest often not completed till nearly the end of August, some still in "cock" in the moorland district of Staffordshire as late as September 80th; and the corn harvest, not only extremely late, but the corn in very poor condition, not properly ripened. With regard to insects, the two most notable occurrences of this most dismal season have been the swarms of *Pyrausta Cardui* and *Plusia gamma*; both these species have been wonderfully numerous, especially the latter, which has absolutely swarmed. The great severity of the past winter caused an almost unprecedented mortality amongst birds, great numbers of various species succumbing to the cold. This mortality was perhaps most apparent amongst the Turdidae and the starlings. Spring brought little or no improvement; birds nested much beyond their average time, and in a vast number of

instances the first eggs have been added and destroyed by cold rains and an abnormally low and continuous temperature. The scarcity of young partridges is probably unprecedented; on some manors not a young bird is to be found, and it will take several good nesting seasons to bring up the stock of their old numbers.

A paper on the Meteorology of Zanzibar, by Dr. John Robb, was also read. The average annual rainfall is rather more than 61 inches, or only about double the average yearly fall in England, and the average number of rainy days is 120. The greater rains fall in March, April, and May; the lesser rains are from mid-October to the end of the year. The driest month is September, with an average rainfall of 1.86 inches; no month is rainless. The mean temperature of five years is 80.6°, and the average yearly range, from highest maximum to lowest minimum, is 17.8°. The hottest months of the year are February and March, with a mean temperature of 83.1° and 88.4° respectively; the cool months are July and August, averaging 77.5° and 77.7°. This gives a small amplitude of the yearly fluctuation, rather less than 6°, and to this limited range of temperature is largely due the debilitating nature of the climate of Zanzibar, particularly as affecting the nervous system. The heat is constant and moist, and even gentle exercise is usually attended with excessive perspiration.

#### THE ROSE.

A CORRESPONDENT ("SOUTH DEVON") asks, "Can you inform me which is the oldest known variety of 'the queen of flowers'?" In reply we will quote from Parkinson's "*Paradisus Terrestris*," published in 1629, who declares that he names the varieties chronologically. He places first the English White Rose, and then follow Carnation Rose, English Red Rose, Damask Rose, Double Province Rose, Red Province Rose, White Province, York-and-Lancaster, Crystall, Gillyflower, Frankford, Hungarian, Velvet, Thornless, Cinnamon, Yellow (single and double), Musk, Apple, Sweet Briar, and Evergreen.

Mr. Rivers says of the Provins or Cabbage Rose (*Rosa centifolia*), "This Rose has long and deservedly been the favourite ornament of English gardens; and if, as seems very probable, it was the Hundred-leaved Rose of Pliny and the favourite flower of the Romans, contributing in no small degree to the luxurious enjoyments of that great people, it claims attention as much for its high antiquity as for its intrinsic beauty. 1596 is given by botanists as the date of its introduction to our gardens. That 'prince of gardeners,' Miller, says that it is the prettiest of all Roses; and this idea still prevails to a great extent in the agricultural districts of England, where, in the farm and cottage gardens, the Cabbage Rose and the double Wallflower are the most esteemed inmates, forming in their turns, with a sprig of Rosemary, the Sunday bouquet of the respectable farm servant and cottager.

"The groves of Mount Caucasus are said to be its native places of growth, and also Languedoc and Provence; but the claims of these latter have been disputed. I lately wrote to a very old Rose amateur in France for information on this point. He informs me that the species with single flowers is found in a wild state in the southern provinces; it is therefore very probable that it was called the Provence Rose from growing more abundantly in that province. The more correct name is the Provins Rose, from its being so long cultivated about Provins in the old province of Brie-Comte-Robert, where the great culture of Roses in France is still conducted. It has now, however, quite a different name in France, for it is called the 'Rose à Cent Feuilles,' from the botanical name, *Rosa centifolia*, or Hundred-leaved Rose.

"The Crested Provins, Crested Moss, or *Rosa cristata*, for it is known by these three names, is said to have been discovered growing from the crevice of a wall at Friburg in Switzerland. No Rose can be more singular and beautiful: the buds before expansion are so clasped by its fringed sepals that they present a most unique and elegant appearance totally unlike any other Rose."

#### LUCULIA GRATISSIMA.

THIS beautiful ally of the Cinchonas is well known in most establishments where large collections of plants are grown, and it is worthily esteemed for the globular cymes of pale fragrant flowers that are produced so freely under suitable culture. The time of year at which the *Luculia* flowers—in autumn and winter, is also a recommendation of considerable importance, for not only is the plant highly decorative either grown in pots or planted out in prepared borders in a greenhouse, but its value is inestimable for cutting purposes, as the

flowers are so continuously and abundantly produced. Such qualities as those mentioned justly entitle the *Luculia* to more general notice and cultivation, and as its requirements are few any person who possesses a greenhouse or conservatory may safely venture to obtain a specimen. When planted out it rapidly acquires the proportions of a shrub or small tree, and

requires to be well pruned after flowering is over; but perhaps it is of more general value when grown in pots of medium size, say 32's, and plants in that size pots or a trifle larger may by good treatment be had bearing clusters of flowers fully as large as that represented in the engraving.

With regard to its cultivation we may remark that it is



Fig. 43.—*LUCLIA GRATISSIMA*.

especially averse to a superabundance of water or the least approach to stagnation at the roots or in the atmosphere. Therefore a porous soil must be provided composed of loam, peat, leaf soil, sand, and a few pieces of charcoal thoroughly incorporated, and whether the plant be in a pot or a border, the drainage must be well attended to. When growing freely, or about to flower, weak liquid manure may be occasionally supplied with advantage. Propagation is easily effected by taking cuttings of the young firm wood, with a heel of the old wood attached, and

insert them in similar soil to that already described, employing rather more sand. They should be placed near the sides of the pots, the latter being plunged in good bottom heat and covered with a bellglass. When the cuttings are rooted shake them out carefully, and pot them singly in thumbs or 60's, afterwards increasing the root room as the plants advance in growth, but being careful not to overpot them. When thoroughly established they may be grown in any cool or intermediate house where the temperature is not allowed to fall much below 50° at

night at any period of the year. If planted out they succeed well under similar treatment to the Camellia (with which they are sometimes associated) in respect to temperature and moisture.—L. CASTLE.

#### NOTES ON VILLA AND SUBURBAN GARDENING.

In the kitchen garden department the work will principally consist in protecting the crops for the winter's supply, and in digging, trenching, and preparing ground for the spring. Compost and manure heaps should be formed and turned over, and manure wheeled on to the ground during very dry or frosty weather. Where early Peas are required, and a warm position in the garden can be allotted to them, a few rows of seed may be sown. If the winter is mild they will be about a fortnight in advance of those sown in the spring. Dickson's First and Best or Carter's First Crop are among the hardest for this purpose. Celery will now require its final earthing on dry mild days, but in many gardens around London this delicious and favourite vegetable is in very bad condition. In our garden, and in others where we have seen it cultivated in a state of excellence in other years, a good stick of Celery cannot be found, the foliage is completely destroyed by the Celery fly. In spite of repeated dustings with soot and lime this insect has survived, probably owing to excessive wet, so that directly the plants were dusted heavy rains washed it from the surface of the leaves. In other quarters we hear complaints of the plants running to seed. To make the best of that which we have we must earth-up the plants well, and during frosty weather protect the rows with bracken or litter.

Cauliflower and Lettuce plants in frames or under handlights should have air admitted to them on every fine day, but during severe frost a protection of bracken or other covering is very essential. Globe Artichokes should have the leaves of each stool gathered up close together when dry, and a band of hay or straw twisted round them and a few dry leaves placed outside to protect them through the winter. So severely damaged were they during the winter of 1878-9, that no early crowns were to be obtained. During September and October many of them produced heads which have continued till the late frost. Jerusalem Artichokes are best preserved in the ground, but require protection from frost. Cut off the stems about a foot from the ground and spread over them a thick layer of dried fern, litter, or leaves, and dig for use as required. Rhubarb and Seakale—If a few roots of each of these are placed under the stages in boxes in a stove or other warm structure they will furnish a supply of produce before it is necessary to start the main crop out of doors. A thin layer of litter or leaves placed over the crowns in the beds will not only protect the roots, but allow them to be taken up at any time, even during frosty weather. Carrots and Beet if not already lifted must be attended to at once, and the roots laid in sand to keep them plump and fresh. The tops of Beet should be twisted off by the hand. Beet is in most places unusually small this year from the heat having been insufficient to mature it.

CONSERVATORY.—This structure is now bright with Chrysanthemums. How beautifully chaste in appearance are many of the Japanese varieties, while the more formal symmetry of the incurved forms contrast admirably with them. The Anemone varieties are also very beautiful in their way, while the beauty and habit of the Pompon and Anemone Pompons render them very valuable for forming the front rows of groups. Thus when flowers are destroyed outside, a most brilliant display can be had within with Chrysanthemums alone. Their cheapness and simplicity of culture place them within the reach of all. That the past season has not been the most favourable for bringing them to perfection must be admitted, yet there are some excellent flowers to be seen, and many a conservatory is now gay with them that otherwise would be gloomy. Pay great attention in giving air on all favourable occasions; keeping the air around them dry is the best way to preserve them. Azaleas, Rhododendrons, Deutzias, Spiræas, Lilacs, &c., are among the best hardy plants suitable for forcing and for producing a display in the conservatory when the Chrysanthemums are past; Roman Hyacinths and other bulbs should be brought gradually forward; and amongst the greenhouse plants coming into flower are Heaths, Epacris, Cytisuses, Coronillas, Acacias, Eupatoriums, &c., Primulas, Cyclamens, and Cinerarias following.

#### WORK FOR THE WEEK.

##### KITCHEN GARDEN.

TURN up all vacant ground roughly, and in the case of heavy soil ridging up so as to expose as large a surface as possible. The advantages of deep cultivation cannot be over-estimated—it is the first principle in high culture. Trenching should be practised every second or third year, seeking by loosening the lower strata to increase the depth of shallow soils, and by bringing up a little fresh soil at each trenching the soil may be permanently improved. Manure buried in autumn or early winter is not nearly so beneficial as that which is spread on the surface during frosty weather and

pointed in at a later period. Thoroughly decomposed manure is very much better for affording satisfactory results in gardens than crude material buried in autumn. The rubbish heap should have attention betimes. All material that is decayed sufficiently for immediate dressing should be separated from that which will require more time for decomposing, and if a ton of lime be added to every six of refuse the decay will be more speedy and effectual.

##### FRUIT HOUSES.

*Cherry House.*—The leaves having fallen the trees should be attended to in pruning, but if stopping has been attended to during the period of growth it will only be necessary to cut back any shoots not required for filling vacant space. Young trees in course of formation will require to have the central shoots cut back as may be necessary to provide a supply of regular growth for the allotted space. Except for the purposes indicated it is not advisable to shorten the terminal shoots, unless it be necessary from the limit of the trellis being reached, or if the trees are confined to pots. The house should be thoroughly cleansed, and the trees also. If the lights have not been replaced it should be done, and the house fully ventilated, except in very severe weather. Plum trees in pots which are to be advanced by forcing should also be pruned, shortening back all last year's growth, superfluous shoots being cut out entirely, avoiding having the shoots too thickly placed, uniformity in appearance being considered, and the knife used accordingly.

*Strawberries in Pots.*—A commencement should be made in forcing by placing plants of an early variety in gentle heat to afford ripe fruit in February. Black Prince is still the best very early variety, and if well thinned the fruits are of fair size. Vicomtesse Hericart de Thury, though not subject to mildew or the production of deformed fruit as Black Prince, is not nearly so large as La Grosse Sucrée, whilst Sir Harry affords fruits both of good size and colour. The drainage in the pots must be rectified if it be found defective. The surface of the soil should be lightly stirred, top-dressing with horse droppings, which will prevent the surface from cracking, and if a little bone dust be given to each plant it will be an advantage. The pots should be placed on shelves near the glass where the plants can have plenty of air, and from first to last they must not suffer by want of water. The house, if one be available, will only require to be kept closed the first fortnight, providing the night temperature does not fall below 45° and the temperature by day be 50°, above which air should be freely admitted. Failing a Strawberry house an early Peach house or vinery will be suitable, the plants being assigned positions near to the glass. It is important that the plants be not too much hurried in the early stages, or the foliage will be drawn and thin and the flowers weak; besides, the season has been so unfavourable to the plants maturing the growth that more than ordinary careful treatment will be necessary to effect a vigorous early growth. Autumn and winter-fruiting plants will need to be carefully watered, keeping those well advanced for ripening moderately dry, and admit air freely whenever an opportunity offers, the temperature by artificial means being 60° to 65°.

*Pines.*—During the next two months the sun will have little effect upon vegetation subjected to artificial treatment. Pines now will be better in a diminished temperature than that hitherto accorded them, particularly young growing plants. A temperature of 56° is a safe minimum, ventilating at the upper part of the house at 58°, allowing the temperature to rise to 60° or 65°, with a liberal supply of air, and the temperature at the roots should be 70° to 75°. In the fruiting department the temperature from fire heat may be lowered to 65°, or in severe weather 60° at night and 70° to 75° by day, and successions under ordinary treatment 60° at night, falling to 55° on cold mornings, and 65° by day. At the commencement of next month the temperature at the roots of Queen plants, which are required to start into fruit early in the ensuing year should be gradually raised to about 90°.

*Cucumbers.*—For the next three months be very careful in the admission of air; and while a little should be given at every favourable opportunity, it should certainly be excluded as far as is possible when it is cold, chilling draughts being very injurious to the plants. Keep a moderate amount of moisture in the atmosphere in bright sharp weather. Attend to stopping, thinning, and tying the shoots, cropping lightly, removing without delay any decayed portion of stem or leaf, and keep the glass clean. Maintain a night temperature of 65°, falling to 60° on frosty mornings, and 70° to 75° by day from fire heat.

*Figs.*—When the foliage has fallen the trees should be pruned. Shoots which have attained the limit of the trellis should be cut back to where the succeeding shoots start, in order that they may occupy their places in the ensuing season. Cut away entirely all elongated spurs, reserving, however, as may be desirable, a few of those which are short-jointed and fruitful. The trees should after pruning be loosened from the trellis, and after thoroughly cleansing the woodwork with soap and water, the glass with clear water, and the walls limewashed, adding a little sulphur, the trees should be washed with soapy water with a brush, and afterwards with some insecticide, avoiding pigments that leave a thick deposit upon the shoots, and when this is completed tie the trees to the trellis, not too tightly. If the trees have not been lifted the border should



be lightly pricked over, the loose material removed, and a top-dressing, about 3 inches thick, given of short partially decayed manure. The house can hardly be too freely ventilated, only when frost prevails it must be closed. The earliest batch of trees in pots should again be dressed with an insecticide, care being taken not to rub off the young fruits. The trees may be put in a mild bottom heat, the pots being placed on pillars of loose brickwork, so that they will not settle with the fermenting material. The heat at the roots must not exceed 60° to 65° until the trees are fairly in growth, whilst the top heat may be 50° to 55° at night and 65° by day, the trees and house being damped in the morning of fine days early in the afternoon. A commencement should be made from now to the end of the month to insure ripe fruit at the end of April and early in May. Water must be given at the roots to keep the soil thoroughly moist, and not less in temperature than that of the fermenting materials about the pots.

## PLANT HOUSES.

**Greenhouses.**—Liliums should be examined, and if not yet potted no time should be lost in completing the work before they begin to push fresh roots. Some of the earliest-flowered *L. auratum* and *L. longiflorum* will by this time be fast producing their new fibres and should not be disturbed. If the pots are large enough simply remove the surface soil and that around the bulbs, dressing with fresh well-enriched compost, or if the pots are too small simply transfer the bulbs to larger pots without disturbing the ball. The drainage must in the first case be examined, and if defective rectified, and in the latter be provided efficiently. The great bane of *L. auratum* and *L. longiflorum* is dryness at the roots, they being more impatient of this than most varieties. It must not, however, be supposed that water must be given unstintedly, as the soil in that case would become sodden and the roots would perish. The potting of all Liliums should always be carried out as soon as the stems have died down, as although some portions of the roots of many varieties are never quite dormant, still at the time when the tops have lost their vitality there is the least root-action. In the case of large masses of bulbs that have increased until it is necessary to divide them, it is still more important that it be done without delay. Fibrous loam with a fourth of well-decayed manure and leaf soil in equal proportions, and sand in proportion to the character of the loam, suits Lilies. The bulbs should be placed as deep in the pots as to admit of about 3 inches of top-dressing, so that none of the roots that are formed above the bulb will appear above the surface of the soil. Neglect of this often results in serious injury to the plants. They should not be placed beneath stages where they are exposed to the drip from other plants. *Tropeolum tricolorum*, *T. Jarratti*, &c., will now be advancing in growth, and should be kept near the glass and regularly trained. A small Larch plant inserted in the pot with its branches left upon it with the bark on forms a suitable support, training the thread-like shoots evenly over it, attending to them regularly, or the shoots become so entangled as to prevent the possibility of making the plant at all presentable afterwards. The bottom of the trellis must in all cases be well covered with the young growth before the shoots are allowed to ramble at the top, or there will afterwards be a difficulty in furnishing the base. Avoid overwatering, but keep the soil moist. *Echeveria retusa* encouraged with a gentle heat will soon be in flower and last for several weeks; it and *Eupatoriums* require to be near the glass, the latter not being allowed to suffer from insufficient water; and by placing a few plants in a little extra heat they will precede those kept in an ordinary greenhouse, thereby securing flowers over a longer period. *Epacris* may be placed in a little extra heat, which will quickly bring them into flower, when they will be found very useful for conservatory decoration or for cuttings of the long shoots. Specimen hardwooded plants should be cleaned and tied. All dead foliage should be removed and the surface of the pots cleared from moss. In replacing the sticks take all the old stumps out of the soil, as they do much harm to the roots. Avoid tight tying, and employ no more sticks than are absolutely necessary.

**Orchids.**—The houses should be kept comparatively dry during cold foggy weather, and the ventilators closed. If any plants require watering let it be done in the forenoon. The present is a good time to examine the whole collection and give the plants a thorough cleaning. *Odontoglossums* requiring larger pots may be shifted, taking care not to disturb the roots more than is necessary in removing the crocks from the bottom. These plants succeed best in equal parts of fibrous peat and sphagnum, with a good sprinkling of sand, and as they require a very liberal supply of water thorough drainage is indispensable. *Pleiones* that have flowered and require larger pots should have all the old material removed from their roots; they will thrive in almost any light compost—equal parts turfy loam and peat, also leaf soil and old cow dung, or peat and sphagnum. The pots or pans in which they are grown should be well drained placing some moss or rough peat over the crocks, filling up to within half an inch of the rim, placing the bulbs an inch apart, and covering over the old roots with half an inch of the compost; water lightly until the roots start into growth. The temperature of the East Indian house should be 60° to 70°, Cattleya and Mexican houses 55° to 65°, cool house 45° to 55°; in bright weather 5° more may be

allowed, and where the nights are unusually cold the temperature may be 5° less than the minimums.

**Forcing House.**—In order to have a good display of flowers during the winter and early spring, forcing must be resorted to and a batch of plants be started. It is desirable that a house or two be set apart for the purpose—light well-ventilated structure, and if possible having a bed for fermenting materials in the house, which will lessen the necessity for fire heat, and be useful for plunging the pots in, particularly herbaceous plants. To grow Lily of the Valley satisfactorily early in the season, whether clumps or single crowns be employed, they should be plunged in a bottom heat of 90°, and when sufficiently advanced the inverted pot, which is desirable to cover them with, should be withdrawn and the foliage and flower exposed to light. When an elegant drooping flower is required for the decoration of large vases few plants are finer than the old Solomon's Seal (*Convallaria Polygonatum*). As a companion plant *Dielytra spectabilis* is unrivalled, good specimens being very fine for conservatory decoration. *Hoteia* (*Spiraea*) *japonica* is another very elegant and graceful plant, alike useful for cutting or decorative purposes. Pinks such as *Lady Blanche*, *Mrs. Moore*, *Anne Boleyn*, *Lord Lyons*, *Rubens*, and *Mrs. Pettifer* are from their sweet flowers very acceptable, but they must not have too much heat; a temperature of 50° at night and 55° by day, advancing to 60° or 65°, is more suitable for them. *Azalea mollis* and its varieties force readily, also the English and Ghent in varieties. *A. pontica* being especially valuable for its fragrance. *Rhododendrons*, selecting early flowering varieties such as *Early Gem*, *Blanche Superbe*, *caucasicum album*, *coriaceum*, *Nobleanum*, *Marian*, *Wellington*, *Broughtonianum*, *Brilliant*, &c., with odoratum for its scent. *Kalmia latifolia*, *Viburnum Opulus*, and the indispensable *Dentzia gracilis*, *Spiraea Thunbergii*, and *Prunus sinensis alba flore-pleno*. *Staphylea colchica* will, we anticipate, be extensively grown when it becomes better known. Lilacs are indispensable. To soften the buds the plant should be sprinkled overhead in the morning and early in the afternoon, but where fermenting materials are employed the necessity for sprinkling will not be so great as in a temperature solely derived from fire heat. Christmas Roses, though hardy, flower more certainly in a greenhouse temperature, the best form being *Helleborus niger maximus*. Where Hyacinths, Tulips, Narcissus are required early a few of these first potted should be placed in heat, 50° to 55° being ample, placing them as near the glass as possible. If only recently removed from the bed of ashes they should be covered with inverted flower pots, tilting after a few days, and when the leaves are quite green they may be altogether removed. Single sweet-scented Jonquills are easily brought into flower by similar means; and a few pots of Scillas, especially *S. sibirica*, are useful, as they do not require much heat to bring them into flower. Violets in pots placed in a temperature of 45° to 50° will flower finely if well-formed crowns are employed, and are always acceptable from their fragrance. Those in frames should have all decayed or yellow leaves removed, the soil lightly stirred between the plants, affording air whenever the external temperature is above freezing point. During frost they may remain closed, and must be protected in severe weather. All plants intended for forcing should at once be placed under cover; a pit where sufficient heat can be obtained to exclude frost is the most suitable place for them, from whence they can be removed as required to the forcing house. Roses in pots must also be placed under cover, and if they cannot be accommodated in a house from which frost is excluded, the pots should be plunged over the rims and the stems protected in severe weather.

## TRADE CATALOGUES RECEIVED.

E. G. Henderson & Son, Maida Vale.—*A Catalogue of Fruits, Roses, and Shrubs.*  
 Thomas Bunyard & Sons, Ashford, Maidstone.—*Catalogue of Roses and Fruit Trees.*  
 H. F. Sharpe, Wisbech, Cambridgeshire.—*List of Potatoes.*  
 Little & Ballantyne, Carlisle.—*Catalogue of Trees and Shrubs.*  
 James Dickson & Sons, Chester.—*Catalogue of Forest Trees, Conifera, &c.*

## TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense. Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

NORTHAMPTON SHOW (*Northampton*).—If there is no doubt that the Potatoes which were exhibited were diseased the dish ought to have been

disqualified altogether, for it is an invariable rule of all exhibiting that damaged or diseased objects cannot compete against those that are perfect.

**DUCHESS D'ANGLÈTERRE PEAR** (*W. Morris*).—We never heard of this Pear, it must be a misprint for Duchesse d'Angoulême.

**SIFTED RUBBLE FOR LAND** (*J. E.*).—We have had no experience on the subject of your inquiry. Rocks vary much in induration, and some of them do not readily yield to the action of frost and rain, and so become disintegrated. By examining the rubble for yourself that has been long exposed you may best ascertain how far it will be suitable for applying to the land. If it pulverises with tolerable freedom it might be in some degree beneficial, but we doubt if it will have any great effect in increasing its fertility.

**TRANSPLANTING SHRUBS** (*J. M.*).—All the shrubs you name will move safely at the present time if the work is carefully done. The positions should be prepared for them before the shrubs are dug up, and as much soil should be retained about the roots as possible. Any rather large bruised or broken roots should be cut off with a sharp knife.

**INSECTS ON APPLE TREES** (*L. K. M.*).—The twigs are infested with the black aphid, which may be destroyed with a solution of Gishurst compound, a strength of 3 ozs. to a gallon of water, applied with a syringe. A fluid ounce of paraffin well mixed in a gallon of water, and similarly applied, squirting a syringe of the paraffin water alternately in the vessel and on the trees, will also destroy the insects and not injure the wood of the trees. The swelling of the spurs of the Pear tree you have sent are quite natural, but the wood does not appear to be quite healthy. Does your garden require draining? The rusting and cracking of the fruit is attributable to inclement weather when the fruit was in a small state. Very wet clayey soils and poor dry sandy soils also contribute to the cracking of fruit, which does not receive the support necessary for healthy progressive growth.

**EARLY APPLE** (*A. Lady*).—The Apple to which you refer as ripening on a wall at the end of July was no doubt the Early White Joannetling. Your description of it is very good. Be careful in trying to get another tree to ask for the White Joannetling, as there is also a Red one.

**TOMATOES** (*Notice*).—Cut out all exhausted shoots, and do not water the plants too frequently, but give a thorough supply when necessary. Weak liquid manure will be beneficial. Pots 12 inches in diameter are convenient and well adapted to your requirements.

**RIPENING THE WOOD OF PEACHES AND NECTARINES** (*W. T. P. H.*).—If the wood is now unripe very little can be done this season, but you may increase the heat and admit all the air practicable day and night until the leaves show indications of falling, when the heat should be turned off. If the leaves have already commenced falling the trees must not be subjected to fire heat, but have free ventilation in favourable weather so as to induce as complete a rest as possible.

**ROSES IN POTS** (*Amateur*).—The most suitable compost for Roses in pots is turfy loam rather stiff, with a fourth of well-decayed manure and a sprinkling of bone dust equal to a twentieth of the loam. The temperature of the house should not exceed 48° to 50° by artificial means until they are fairly in growth, when it may be raised gradually to 55° at night and 60° to 62° by day, with free ventilation. If you do not wish to force them early they succeed admirably from January onwards in a greenhouse, assigning them light airy positions. After they commence growth liquid manure should be given at every alternate watering, and when in full growth it may be given whenever water is necessary, taking care not to apply it too strong. Until required for placing in heat the plants should be kept in a cold pit or house with the pots plunged over the rims, and in severe weather afford a protection of mats in addition to the lights.

**VINES IN NARROW BORDERS** (*G. A. S.*).—You may grow Grapes of good quality though you are only able to make a border 2 feet in width. You will need to put in 6 inches of rubble for drainage, and over it a layer of curves grass side downwards. The loam being of a tenacious nature add to it one-sixth of old mortar rubbish and a twelfth part of half-inch bones, incorporating thoroughly. The compost should be applied in a rather dry state and made firm. As to the cubic feet of soil to allow to each Vine, that depends on the space the Vines are to occupy. Vines in pots with 8 feet of rod succeed in pots containing less than 8 feet (cubic) of soil; but we should make the border as large as practicable, allowing at least 12 feet to each Vine, and as much more as you can. It will be necessary to water them liberally with liquid manure when growing. They should be planted when they have commenced growing or when the shoots are about an inch long. Black Hamburgh is most suitable, and a good white companion is Foster's Seedling.

**CHRYSANTHEMUMS AFTER FLOWERING** (*Rector*).—They may be wintered in a cold pit or frame, cutting them down as soon as the flowers have faded. The young shoots should be taken off with a small portion of root stem, and may be inserted singly in small pots, or three around the sides of a 2-inch pot; and the pots being placed on ashes in a cold frame the cuttings will root slowly but surely, keeping them moist, affording slight shade when the sun is bright, and keep them rather close until rooted. They should be transferred to larger pots when the cutting pots are filled with roots, taking out the point of each shoot when about 4 to 6 inches in length. The old plants, if you wish to keep them another year, may be turned out of the pots, removing all the old soil, cutting the roots back, and repot in 8 or 6-inch pots.

**WINTERING PETUNIAS** (*A. B. C.*).—We do not recognise the plant you were told was a Carnation. The Petunias should be kept near to the glass in a house from which frost is excluded, not giving more water than is sufficient to prevent the foliage from flagging. We should cut the plants back, each shoot to within a few inches of its base, and when the plants have made fresh growth an inch or two in length shift them into pots a couple of inches larger in diameter, and by tying out the plants and supplying with liquid manure after the pots are filled with roots the plants will grow rapidly, and if kept near to the glass and the house well ventilated they will flower freely. The shoots removed may be put in as cuttings, and if kept moist they root safely in a greenhouse, flowering more freely than plants from seed.

**CHRYSANTHEMUMS FOR PLANTING AGAINST SOUTH WALL** (*A. Lady Gardener*).—There are not many that would not succeed in such a position as from the warmth afforded by the wall they make growth early, and with a slight protection, as that of canvas, the blooms could be protected against autumn frosts. The chief object will be to see that they do not suffer from drought in summer, mulching over the roots with short manure and water.

ing liberally in dry weather. Large-flowered varieties:—Alfred Salter, Mrs. G. Bunde, Mr. Heale, Mr. Foreyth, Miss Hope, Aurea Multiflora, Empress of India, Prince Alfred, Prince of Wales, Frogné, Golden Beryl, and Princess of Teck. Japanese: Fair Maid of Guernsey, Elaine, Belle Levant, La Frisère, Fulton, and La Nympha. Pompon: Calliope, Cedo Nulli, Golden Cedo Nulli, Mrs. Hunt, and Aurora Boreale.

**HERBACEOUS PLANTS FOR FLOWERING IN AUTUMN** (*Idem*).—In addition to Phloxes and Michaelmas Daisies (Asters), Anemone japonica, A. japonica alba, Colchicum autumnale flore-pleno, C. autumnale album and var. plenum, Crocus sativus, C. nudiflorus, C. Sieberi, C. speciosus, Cyclamen hederifolium and var. album, Polygonum vacinifolium, Schizoclelea coccinea, Sedum spectabile (Faberium), Statice latifolia, Tritoma Uria glaucescens, S. grandiflora. Violets: Victoria Regina and De Parma.

**RETARDING PRIMULAS** (*Idem*).—They may be had in flower at the time you wish by removing the trusses of bloom as they appear until the early part of February. Those now shifted into 8-inch pots and grown on through the winter will flower at the time wished, removing the trusses if any appear before the early part of February.

**NAMES OF PLANTS** (*J. B. Boyd*).—Stapelia bufoia, a native of the Cape of Good Hope, introduced to this country in the beginning of the present century. We should be glad to receive a note on the shrub to which you allude. (*C. W. D.*).—Euonymus europæus, the Spindle Tree. (*J. W. T. Darlington*).—Chrysanthemum frutescens, a useful plant for conservatory decoration during autumn and early winter. (*A. Boyle*).—It appears to be the leaf of a Hedychium. (*H. F. C.*).—We cannot give the name of a plant from such a brief description. There are dozens which resemble the one you mention. The tree referred to is Paulownia imperialis. (*J. F.*)—Specimens insufficient for identification.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### THE APPLICATION OF CHALK AND LIME TO LAND.

(Continued from page 414.)

In almost all cases where the lower chalk can be obtained it should decidedly have the preference over the hard white upper chalk with flints in it, because we have seen it lying on the ground for years in large lumps, on which the frosts have had but little effect in reducing. This has been the case more frequently when the chalk has been applied during the spring and summer months, for the sun and wind will harden it so that it may be used in building walls, sheds, &c. It is desirable that chalk should be laid out in the winter months, and it is also best to get it in a fine state for laying out, otherwise the lumps should be broken by stone-breaking hammers as fast as spread, into pieces not larger than a hen's egg. In those localities where only the hard white chalk can be obtained it would certainly answer the purpose better to burn it into lime instead of using it as chalk, as by that means it would not only become more quickly and intimately mixed with the soil, but the carriage of the article would be greatly reduced—in fact, to nearly one-half. As we have before observed that 100 tons of good chalk when burnt should yield 56 tons of lime, but when it leaves more than that it shows that the chalk has been imperfectly burnt by still retaining a portion of its carbonic acid, or that it is of an inferior description, containing many impurities. Then it is important for the home farmer to consider which is cheapest—to carry 100 tons of pure chalk for long distances, and after being laid out remaining on the ground for a long time in large lumps, from which the crops can derive but little benefit; or go to the expense of having it burnt into lime, thereby reducing the carriage to 56 tons, and it is in such a state that the first shower of rain disseminates it all over the ground. In many districts we have seen lime kilns attached to estates some distance from the chalk; others near and attached to the chalk pits, so that the process of burning may be going on continually, and thereby affording parties who live at a distance the opportunity to use lime instead of chalk. In various parts of England and Scotland—where the only carbonate of lime is a hard rock, composed of fragments of corals, &c.—it must of necessity be burnt, otherwise it would be of no value for agricultural purposes.

It is found that the application of 20 tons of chalk per acre will last about twenty years on dry friable land under a system of close cropping, but under ordinary farming, say the four or five-course rotation, we have on our property found that it will benefit vegetation for a period of twenty-five years, and on



strong soils, when 80 or 40 tons are applied, for thirty years. We have chalked our land twice, and in letting land we always, when possible, arrange with the tenant to chalk a given number of acres every year, being paid by the next tenant a proportion of the cost extending over a period of six years. Tenants often object to apply chalk, saying they cannot afford it; but they can afford and do manure the land with purchased manures. We should therefore consider chalk as manure—in fact, it is more than manure, for manure will not be effective where chalk or lime is absent from the soil. Even if one course of manuring was omitted, and chalk applied instead, it would be in favour of chalk at the end of a term of occupation or the end of a tenancy.

The mode of obtaining chalk is various. Sometimes it is only obtained by drawing it a distance of seven or more miles; sometimes on farms near the coast it is obtained by water carriage. Either way it is very expensive. In case, however, when we have strong loams upon the clay resting on chalk it is the best practice to dig wells for it in the field where it will be required for use, and this is often the best of chalk, being of the lower strata, of a brownish colour, and generally without flints. The chalk when brought to the surface is wheeled out with barrows, the work of digging, bringing to the surface, and spreading being done at so much per acre, and it is certainly the cheapest plan we know, and when done in this way the quantity applied is seldom less than 40 tons per acre, and it is certainly none too much upon the heavy land we are referring to. We often find that the soil on the hill farms which appears near the surface, and is called white land, is ploughed deeper to bring up chalk. This practice on the hard or upper chalk fails, because it is rubble instead of chalk—that is, it has been robbed of its virtues by the roots of plants and the action of air and water for generations, and instead of chalk it has become rubble and more like gravel than chalk, and when brought into work makes the land too loose and light, and having been deprived of its alkali is no benefit to vegetation. A great mistake therefore is often made by the farmer who says, *My land does not want chalk, for there is plenty in the land.* In all cases we advise the home farmer to have the land analysed, for it has been found that chalk was totally absent from the active soil, although chalk had been found but a little below the surface. If chalk is not entirely absent or worn out in the land there is often not sufficient for the wants of the plants, for many vegetable acids frequently require to be neutralised.

The evidence of want of chalk is a matter of great practical importance, and there is no evidence so reliable as that of certain weeds prevailing to the injury of crops, such as the corn marigold, sorrel, morgan, also a small weed locally called bunting, and prevailing especially on sandy land, the white-rooted couch, the twitch or water grass running on the surface, especially on strong heavy land, and also the black bent grass. All these denote the absence of chalk in the soil more or less, and practically it is impossible to keep the land clean—in fact, it is the decay of many of these weeds which leaves the injurious vegetable acids in the soil, and is really the cause of chalk being required on heavy land, and lime upon the light soils; still all crops require lime, as we have before stated. In considering the practical effect of chalk and lime, and believing, as we do, that in ordinary cultivation chalk will last twenty years, and that 10 tons of lime to be the equivalent, the chalk will continue to operate for a much longer time than lime; we therefore propose that 5 tons of lime should be applied at the end of every seven or eight years instead of giving the whole dressing at first. In the case, however, of farms being quite out of chalk, and which is the case in various important districts, it is not practicable to chalk a whole farm or estate within a short period; therefore we have advised that an arrangement should be made with the tenant in occupation or home farmer to chalk or lime a given acreage every year, in order that within a reasonable time the whole of the land requiring it should be done, so that the letting value should be maintained or increased as circumstances occur. In the meantime, as fast as the rotation brings the fields in course for roots, it is well that about 20 or 25 bushels of screened chalk should be drilled with the arti-

ficial manure, in the same way as ashes are generally used. This will ensure a sound growth and increased weight of the crops, at least as far as turnips and all the Brassica or cabbage tribes are concerned, the exception being mangolds, carrots, parsnips, &c., which will produce fair crops without chalk in the land, but much better crops when chalk or lime is present in the soil. These observations bring us to the point where some difference of opinion still exists—as to the cause of ambury or clubbed roots, to which turnips, cabbages, &c., are subject on certain soils and in certain seasons, the latter being often considered to be the cause of this disease of the roots of the plants; but this is not so, because we speak from a long experience in the growth of roots, and we assert most distinctly and advisedly that the absence of chalk or lime is the cause of this disease in the roots of these plants. Of course, during the decay and disease of these plants they will always be found infested with parasitic insects more or less, according to the weather, the time of year, the stage of disease, and other influences. Now, this fact of the presence of insects has raised considerable discussions amongst eminent theorists as to whether the insects are the cause of the disease or were only located there in consequence of putridity of the roots. We say the insects do not cause the disease, but are found there in consequence of it. We find that some theorists hesitate very much, and do not give a decided opinion either way; but we, together with some of the most practical men of the day, assert, as the result of our experience, that this disease, whether called ambury or clubbed root, never has been known to affect the root crops when a proper amount of chalk or lime has been found in the soil and ascertained by analysis. It has frequently been asserted that the disease is often found upon soils resting on chalk, or what is called chalk soils; but, as we have previously shown, this is a mistake or a delusion, because land resting upon chalk or rubble is frequently found to be entirely destitute of chalk or lime in the active or surface soil. It is said by the market gardeners that manure will prevent the club roots in cabbages, &c.; so it will sometimes if the town manure, consisting principally of coal ashes, is applied in large quantities, because this kind of manure contains more or less lime; but pure horse, cow, or pig dung, which contains but little if any lime, will not produce the same effect.

#### WORK ON THE HOME FARM.

*Horse Labour.*—On some farms where the land is dry and friable, and the land sown with wheat out of clover ley, it has been finished and in good order with no more than the usual labour of ploughing, pressing, harrowing, &c., and upon such occupations the home farmer has now only left the land where roots are being eaten off to be sown the first favourable opportunity. Upon the strong land, however, it will be some time before the wheat seeding can be completed. Under such circumstances where the land was attempted to be fallowed in the summer, or where fallow crops have been fed off on the land, the ground is not generally in a proper state of cleanliness to be seeded. Therefore, even if the land is in good condition as regards manure, the precaution should be taken of ploughing with skim coulter and followed by the presser, so that the roots of grass and weeds may be properly tucked under the furrow. The sowing is also of extreme importance in such cases, because we say that the wheat should be drilled at 12 inches between the rows, so that in the spring of the year the land may be properly horse-hoed in order to destroy the weeds and couch, or keep them under so as not to compete with the wheat plants. Another effect is the opening of the surface by the horse hoe, at the same time not only giving vigour to the plants, but destroying weeds started from seed in their infancy upon any strong land. The farmer will not be master of his position unless wheat is drilled at the wide distance. We also advise that at all intervals when the weather makes it possible for to effect any cleaning of the surface of land intended for potatoes, mangold, cabbage, carrots, &c., it should be done. We do not expect, however, to be enabled to burn any rubbish which may in rafting, scarifying, and harrowing the land be got together on the surface by the chain harrow, horse rake, &c., at this late period of the season; it may be carted away to heap and be valuable for purposes which we have often referred to in these columns when it becomes decayed. Our system has been for many years to continue cultivation of this kind as long as the state of the land renders it possible, and then to go on fallow-ploughing the land a good depth, and let it lie the winter ready to be cultivated with the scarifier, whether for barley after wheat or root crops, as spring ploughing is always attended with more or less uncertainty of results, whether the season proves wet or dry, the time of seeding, too, being always one of the most important factors in the transactions of early and spring seeding of the various crops.

*Hand Labour.*—This is now the time of year for planting, because trees, whether of the firs for timber or underwood for various purposes, for wherever the plantations are of sufficient age and growth to pay for cutting, let the land be cleared of the crop of timber and planted again; for in the work of grubbing up and lifting the stumps and stools of the timber which has been cut the land will or nearly so be got in order for replanting, or for future cultivation, if it is so intended. We could now point

to many pieces of land upon gravelly and sandy soils which were comparatively worthless for cultivation when first planted, yet after bearing a valuable crop of Scotch firs cut and sold for railway sleepers, or in other cases where the larch firs have been grown and cut and sold for hop poles, or left to become of larger dimensions. The land has been made valuable owing to the annual fall of leaves during growth, by accumulation of humus in the soil, and thus not only has the land been brought into cultivation but yielded also a valuable and profitable crop of timber, whilst the land has been preparing for future cultivation. In fact, this is almost the only way in which we have been enabled on various estates to make it answer for bringing poor thin soils into a condition for agricultural purposes. Threshing corn will now be going on, at least the portion of the crops which has been harvested in fair condition. In doing this we must consider the uses for which the straw and chaff will be required, for with such a deficient crop of roots as we have this year in most districts it will be of more than usual importance to preserve any straw required for feeding cattle in the best possible manner, not only by properly stacking and thatching, but also by the use of some spice or flavouring materials strewed over it in the act of stacking. We recommend oat straw as being preferable to all other for feeding cattle, as illustrated by analysis of its feeding properties. Now the root crop is so short it will serve to teach the home farmer or remind him of the propriety and advantage of giving a very small allowance of roots to the in-lamb ewes. It is too often the case when roots are plentiful that the sheep are given roots without stint, and with reference to the feeding of pregnant ewes it has frequently been the cause of serious losses both of ewes and lambs at yearning time. Another important point in feeding the ewes is, that we have always found sweet straw better than hay, especially when the straw has been prepared for the purpose in one of the various methods adopted. Some farmers pulp roots to a small extent just sufficient to mix with and moisten the straw when cut into chaff; others merely cut the chaff, damp it, and add some spice. Some farmers use molasses or rough treacle to mix with the chaff; any of these mixtures answer a good purpose if they induce the ewes to consume straw in preference to hay.

#### MESSRS. CARTER'S ROOT SHOW.

On the 21st inst. Messrs. James Carter & Co. held their annual Exhibition of Roots in the Agricultural Hall, Islington, and notwithstanding the adverse season growers have had to contend with, the exhibits were both numerous and of general good quality. Most of the classes were well filled, and in some the competition was particularly close and good. Nineteen classes were appropriated to roots, and the entries in these classes numbered collectively over six hundred; the prizes ranging in value from £10 down to 5s.

The principal exhibitors were Her Majesty the Queen, H.R.H. the Prince of Wales, the Right Hon. Lord Clinton, the Right Hon. Lord Hastings, the Right Hon. Lord Warwick, Sir Wm. Farquhar, Sir Curtis Lampton, Admiral Sir G. N. B. Middleton, Sir Paul Hunter, Major Alfred, East Barnet Local Board, Mrs. Morten (steward, Mr. Cave), Bedford Urban Sanitary Authority, Professor Buckman, R. Webb, Esq., and Messrs. Hepburn & Son, Dartford.

In the class for the best twelve roots of Carter's Prizewinner Swede upwards of 120 competitors appeared, many staging collections of excellent quality. The first prize was awarded to Mrs. Morten (steward, Mr. Cave), for a collection of remarkably even handsome specimens. In the four classes devoted to Mangolds, eight roots of the following varieties: Carter's Warden Yellow Globe, Mammoth Long Red, Intermediate, and Yellow Tankard-shaped, the premier prize in each class fell to Mr. R. Webb, S. Beamish, Esq. (steward, Mr. Beecher), Sir Paul Hunter (steward, Mr. Firman), and R. Webb, all of whom exhibited roots of superior quality. Two classes were appropriated to Turnips, twelve roots of White-fleshed and Yellow-fleshed respectively. In the White-fleshed class the honorary position was allotted to a collection from the farm of Her Majesty the Queen (steward, Mr. W. Briggshaw). The roots were very symmetrical and of fine quality. W. L. Beale, Esq. (steward, Mr. G. Whitfield), was awarded the chief prize in the other class. Kohl Rabi was well shown by B. P. Harris, Esq., who gained the first prize in the class for nine roots of Carter's Imperial Green. Mr. R. Webb exhibited the heaviest and handsomest root of Carter's Improved Mammoth Prize Long Red Mangold, and accordingly was awarded the premier prize. The same exhibitor also received the chief prizes in the classes for single specimens of Mangolds and Swedes of Messrs. Carter's approved varieties. The silver cup value £5 offered for six roots of Carter's prize Mangold, any variety, grown upon sewage farms only, was awarded to the Eton Local Board (steward, Mr. C. Tough), for an even and good collection. The five-guinea cup offered by Messrs. J. Gibbs & Co., 16, Mark Lane, for the best collection of roots grown from Messrs. Carter's seeds with Messrs. Gibbs' manures, was obtained by T. H. Farrar, Esq. (steward, Mr. S. Stevenson), with a fine collection; and the silver cup of equal value, offered by Messrs. Ohlendorff & Co., 15, Leadenhall Street,

under similar conditions, was adjudged to N. Parry, Esq. (steward, Mr. F. J. Holmes), also for highly meritorious roots. Among Messrs. Carter's miscellaneous exhibits were sixty-two varieties of Turnips grown in their trial ground all good and true, and large heaps of the Champion and Magnum Bonum Potatoes, the former of which produced in 1878 nine to twelve tons per acre, and the latter six to eight tons per acre.

The whole Exhibition proved a great success, and Messrs. Carters are deserving of credit for their energy and confidence in holding their exhibition in such an unpropitious season.

#### "ANY OTHER VARIETY" CLASSES.

We fear that poultry fanciers are wont to be somewhat changeable in their fancies. There are certainly breeds of undeniable excellence which always hold their own and probably always will do so, but there are others of great beauty and some usefulness which have their day and then are neglected. We have often expressed our opinion that what are called "paying" classes at shows have had much to do with the almost extinction of some varieties, which have been relegated to the Any other variety class simply because they were not entered in large numbers, and there often passed over from the predilections of particular judges for particular sorts, or from the sheer immensity of competition have gone out of notice and been lost, or only survive in a degenerate state from having been long bred in-and-in by one or two faithful admirers. We must own to a considerable improvement of late in this respect. Through the exertions of single fanciers or of clubs of fanciers several kinds now have their class at every moderate-sized show which a few years ago took their chance in the general refuge for the destitute. We can remember when the French breeds emerged from it; then Black Hamburgs, then Malays, then Leghorns, then Andalusians, and now Sultans are doing so. In the case of some of these breeds the particular class was only a revival, for in former days Malays and others had them but again declined. There are still, however, many beautiful kinds which we seldom see out of a variety class. How often in a report of a show, after elaborate criticism on the toes of the winning Dorkings and on the pencilling of the Brahmas, do we read, "the Any other variety class was large and interesting," with little notice of the less-known occupants of its pens?

We purpose from time to time to devote a few articles to the description of some of the breeds which are only seen in such classes, which either for their beauty or good qualities we should like to see more cultivated. Foremost among them is a breed on which we will now give a few notes—viz., Buff Polish, or, as it is called in France, Padoue Chamois. It is by no means a new race, but one which we have been wont to see now and then from our childhood in variety classes at Birmingham and elsewhere. In the original "Poultry Book" by Messrs. Wingfield and Johnson was a very pretty illustration of these birds which has not been reproduced in Mr. Tegetmeier's work. Perhaps it was somewhat flattering; at least, we have never seen hens so well marked, though some cocks at the great Paris Exhibition of 1878 almost came up to the standard. The general characteristics of the breed resemble the rest of the Polish family. It is said to have been produced by a cross between the Golden-spangled and the now almost extinct White Polish. The most perfect type of plumage would be in the cock the golden part, as in the Golden-spangled, with white markings substituted for the black, though such a bird we have never seen. The hen should be of a deep buff colour all over with white spangling, though the hens we have seen are further than the cocks from at all approaching this standard. The breed is very beautiful, even when specimens of it fall far short of this ideal excellence.

It is by no means uncommon in France, where a beginner would have a good chance of procuring good birds at what in England we consider moderate prices. There seems a general tendency in it towards mealiness—at least, the birds now shown in England are almost always too pale in colour; indeed, some which we lately saw, and which we believe are descended from some first-rate French stock imported last year, were so also. We should therefore advise that recourse should be had to the Golden-spangled in any attempt to improve the breed. A cross with a good Golden strain ought to improve the form as well as the feather, for in symmetry of crest it certainly by no means comes up to the three better-known varieties. It certainly has the elements of being one of the loveliest of the tufted fowls we possess; and we believe that only a little time and trouble is needed, in a tolerably warm and dry climate, to bring it to a state of perfection which could not fail to carry all before it in "Any other variety" classes.—C.

#### BIRMINGHAM CATTLE AND POULTRY SHOW.

THE managers of this important agricultural association are to be congratulated on the support which has been accorded to them by intending exhibitors at the thirty-first annual Show, which opens on the 29th November.

The entries of cattle are exceedingly large, and the Show being

held before the London one, they will no doubt be all present, and should by all means be seen in their first bloom after leaving home. Sheep and pigs are a fair show, and the roots, contrary to general expectation, will form the largest collection ever seen in Bingley Hall.

£2700 is the amount of prizes given this year for meritorious specimens in almost every branch of agriculture, including the too much neglected poultry, which is here seen in perfection. Turkey cocks are found weighing close on 40 lbs. each, Geese 50 lbs. the pair, Ducks over 20 lbs. the couple, fowls up to 12 lbs. each. The breeding of profitable poultry properly encouraged should effect great improvements in the specimens usually seen in the farmyards of the kingdom.

The Hall has been thoroughly put in order for the Show; the gasfittings are entirely new, twenty-four new skylights have been put in the poultry bay to afford additional light, and to further secure this the new wire pens will be used throughout.

The applications for space from implement makers are unprecedentedly large, so much so that many not exactly legitimate exhibits are declined altogether, and others receive only a third of the amount applied for.

Most satisfactory arrangements have been made with the railway companies as to excursion trains from all parts; and with favourable weather we look forward with confidence to the issue of the 1879 Show.

The judging commences on Saturday the 29th inst., when the charge for admission is 10s., except to life members, who receive free admission to the whole Show, in addition to other privileges.

Monday December 1st, when the admission is by subscribers' tickets or payment of 5s., is considered the ladies' day, when the *élite* of the midland counties are present in large numbers; for Tuesday and Wednesday (1s. days) numerous excursion trains are announced; and on Wednesday and Thursday evenings the working classes and children will be admitted at the reduced rate of 6d. after 5 P.M.

### THE CRYSTAL PALACE POULTRY SHOW.

**Houdans.**—Cocks of this breed numbered twenty pens, though two or three were empty. First (Stratford), which won and well deserved the cup, was a fine cup bird, stout in build, very sound in feet, nice crest, very good and not exaggerated comb, and very good in colour. Second (Wilson) was a large thick-set bird, very nice in colour but bluish in leg, scarcely correct in comb, and rather small in crest, which will improve yet doubtless. Third (Ogden) was good in comb, middling in crest, nicely mottled, good feet, large, well made. 981 (Meredith) a large bird; 984 (Mrs. Lane) very broad built, good in crest, and poor in comb; 928 (Rintoul) good in crest and comb. Hens (eighteen) were a good class. First (Stratford) was a very large hen, beautifully and correctly mottled, very good in crest, and sound in feet; she has spurs. Second, belonging to the same exhibitor, was very evenly mottled, but darker in plumage than first; sound in foot, but with blue legs, fine in crest, and very large and good; in very fine plumage. Third (Morris) was a good heavy hen, sound in feet, good in colour, and fine in crest; 948 (Meredith) good in colour, size, and crest, but with one bad foot; 950 (Thomas) light in colour, but very good in crest; 961 (Howard) a very good hen, large, good in colour, splendid crest, and sound feet. Cockerels numbered twenty-four pens. First (Nicholls) was a good style of bird, good claws, nice comb and crest, and fair in size; second (Hamlyn) was very good in size and colour, very good in feet, nice crest and comb, and a cheap bird; third (Ogden) was large, fine in crest, good in colour, limb, and claw, but scarcely the thing in comb; fourth (Blair) had nearly white legs, was good in crest and comb, fairly good in colour, and of nice size; 970 (Lane) was white in crest; 978 (Brooke) dark, good, will make a fine bird; 988 (Harrison) good in size and fair in crest. Houdan pullets were the largest class of this variety, counting up thirty-two pens. First (Thomas) was a very good pullet, fine in leg and claw, splendid crest and beard, and good colour; second (Wood) was large, good in crest, fine in colour, shape, legs, and feet also good; third (Stratford) was a very good globular-crested bird, good in colour, of nice size, good toes, but rather too blue in legs; fourth (Pearce) good in shape, also in legs and feet, rather small, and white in crest; 995 (Pattinson) pretty crest, good colour, nice shape, and sound feet; 997 (Thomas) good, very pretty crest; 1006 (Stratford) rather dark, good in size and claws, nice crest, but bluish leg; 1017 (Wood) and 1020 (Hall) good pullets. The Houdan classes contained many really good birds.

**Crève-Cœurs.**—The Crèves were not so numerous as the Houdans, nor yet were they equal in quality as a whole. In cocks (nine in number) first (Mackwell) very good in size, shape, and comb; good in plumage, and a good broad bird, but not large in crest. Second (Wilkins) was good in comb, fair in crest, and large; but his appearance in the show pen was not improved by one spur growing downwards. Third (J. Ward) was large, and his crest all on one side. We much preferred 1028A (Malden), a fine large bird, in fine condition, and good in head characteristics. The class, as a whole, was rather poor. Hens were better, numbering

eighteen. The cup bird was good and very close in crest, very glossy in plumage; a large and very good bird, although she had bluish legs. Second (Ward) was splendid in crest, large, and very broad; in fact, larger than the winner, and quite equal, we thought, in other respects, excepting not being so glossy in plumage. Third (Ogden) was large, fine in crest, and good in shape, but dullish in colour; 1029 (Jackson) was a good crested hen; 1081 (Calvert) was rather small, but fair in crest; 1085 (Wood), 1087 (Ward), and 1045A were all good hens, good in crest and size. In cockerels (fifteen) first was a clear win, being splendid in crest, good in comb, very good in style, and in very fine condition; although rather small. Second (Hall) small in comb, close-fitting in crest; a stout well-built bird. Third (Ward) good in crest, rather large in comb; a large and glossy bird. 1054 (Williams) good in crest; 1060 (Clayton) very large.

Pullets were a fair class of fifteen. First (Hall) had a very close globular crest, glossy plumage, and was a very good large bird; second (Chadwick) was large, good in crest and in shape; third (Calvert) was a nice-shaped bird, but rather small in crest; 1066 (Burrell), 1070 (J. Ward), and 1078 (Fowler & Co.) were all good.

**Game.**—Black Red cocks (fifteen) were a good lot upon the whole. First (Hon. and Rev. Dutton) was not yet in full feather, but a very good bird, beautiful in colour, and good in head; second (Pratt) was a good long-headed bird, bright in colour, and of nice style; third (Randall) good in head and colour, tall, and reachy; 1242 (Pope), 1237 (Colgrove), and 1248 (Dr. Cameron) were good birds; 1240 (Matthew) good in colour and shape, but not well through moult yet. In cockerels (twenty-one) first-and-cup (Pope) was the Oxford cupwinner, a splendid bird, very good in head, colour, and style, and very leggy; second (Matthew) was a very leggy bird, capital in colour, and splendid head; third (Gray & Stephen) good in limb, good head, and nice style; fourth (Walters) good in head excepting eyes, and fine colour; 1246 (Bellman) very good style, 1248 (Mason) nice colour, 1258 (Nelson) good and nice style, and 1259 (Pratt) good in colour and shape.

In hens (fifteen) first-and-cup (Pope) had capital legs, very good in head and eyes, nice shape, and good colour; second (Sales) was a good-shaped bird, nice colour, a well-made bird, with a very good eye; third (Staveley) had dark eyes, but was very good in colour, leggy, and of good shape. The highly commended hens and several others in this class were very good birds. In pullets (twenty), first (Matthew) was a grand-headed bird, good sound colour, and fine style; second (Voisin) was good throughout, fine in colour, and in head; third (Caton) was a nice well-made pullet in splendid condition; fourth (Shore) was good in colour, nice style, and good tail; 1290 (Lyon) a very good pullet, fine in shape; 1800 (Pope) good, as were the other mentioned birds.

In Brown Red Game cocks (thirteen), first (Garnett) succeeded in carrying off the cup for the best Game cock in the four classes. He was good in colour, though just a trifle dark on the breast, splendid in head, good face and eyes, and good in shape. Second (Matthew) was a good one, very good in shape, and a splendid head, though his colour was scarcely to our taste, being too dark; third (Maynard) very good in head, gipsy face, and sound in colour, though dark on the breast; 1808 (Wolff) was good in shape and very nice in colour; 1805 (Martin) very good in head and colour; 1809 (Sanders) a nice laced breasted bird; 1814 (Cameron) a very good bird with a splendidly laced breast.

Cockerels were a large class (twenty-five), and the cupwinner (Fenwick) was in nice condition, of very good colour and with finely laced breast, very good in face and eye; second (Matthew) was darkish in colour but good in shape, with a fine head and good gipsy face; third (Garnett) was dark in colour, but very well laced on the breast, fine in head, face, and eye, and in first-rate condition; 1815 (Wolff) a good bird; 1818 (Gray & Stephen) nicely laced breast; 1820 (Mercer) very young, but good in quality and very good face; 1822 (Martin) out of condition but beautifully laced on the breast, very good in colour, and good face and head; 1830 (Riley & Cooper) and 1838 (Braithwaite) were good birds. In hens of this variety (eighteen), first (Matthew) good in size, beak, and comb, fine gipsy face, well made and good in colour; second (Voisin) nice in shape and good in head, fair hackle, a fine strong made bird; third (Mather) a very good bird excepting her coppery hackle, in very fine plumage; 1858 (Cannon) very highly commended, splendid in hackle and very good head; 1842 and 1843 (Warner and Hodgson) both good birds; 1866 (Fenwick) also good. In pullets (twenty-six), first (Fludger) a grand bird, fine in head, eye, face, and beak, and splendid in hackle; second (Matthew) also a splendid bird, and very similar; third (Webster) good shape, very fine hackle, and good head; fourth (Garnett) nice head, good hackle, and very good eye; 1860 (Ward), 1876 (Taylor) good, and 1877 (Braithwaite) very good in hackle.

Duckwing cocks were a small class (nine). First (Matthew) was a grand bird, splendid in colour, fine in style and condition; second (Harley) very good in colour and style; third also a good bird; 1885 (Martin) a good bird. In cockerels of this breed (thirteen entries), first (Dr. Cameron), a very fine-shaped bird, not quite perfect in colour but a good bird; second (Fell) very

good in shape, head, style and colour; third (Garnett) very good colour; 1898 (Staveley) very good in colour and head; 1400 (Freak) good. In hens (eight) Mr. Matthews won very properly with a hen in very good hard feather, good in head, eye, and comb; second (Thomas) handsome colour, good in shape, fine head but dark eye; third (Kitson) coarse in comb, good in colour, and good in eyes; 1407 (Staveley) very good, especially in colour. In pullets (twelve), first (Sales) very tight in plumage and good all round, excepting a darkish eye; second (Matthews) was also darkish in eye, but a well-made bird, good in colour, and with a capital long head; 1419 (Hollingworth) and 1421 (Harley) good pullets. In the four classes for Game of any other variety all are Piles; and in cocks (six), first (Fitzherbert) was a willow-legged bird, fair in head and plumage; second (Walker) a yellow-legged bird, good in shape and very leggy; third (Cannon) another yellow-legged one, good in shape and nice in plumage.

This was not a very good class, but the next for cockerels (ten) was better. First-and-cup (Lyon) a splendid yellow-legged bird, long in head, very leggy, and a fine bird; second (Colgrove) a fine handsome bird, yellow-legged, good in head, very fine in colour; third (Colgrove) a yellow-legged bird in very good plumage; the other honourably noticed birds also good. In hens there were only four entries. First (Walton) was a good shaped and good coloured hen; second (Colgrove) a large hen of good colour; third (Lyon) dark in eye, rather pale on the breast. In pullets (ten) all were yellow-legged. First (Colgrove) a nice pullet, though we thought her a trifle clumsy; second (Colgrove) a good bird with a nice head; third (Walker) a good shaped bird.

In the five-guinea Selling class, first (Maynard) were Black Reds; second (Fenwick) Brown Reds; third (Colgrove) Piles. In *Malay* cocks (fourteen), first-and-cup (Mercer) was a good tall, leggy Black Red cockerel, very fine, large, and in good plumage; second (Waring) large, and in good condition; third (Michael) a good bright-coloured cock in good condition; 1479 (Walton) and 1488 (Nicholls) were capital white cocks. In hens (fourteen), first (Burnell) was a good large lightish-coloured hen; second (Mercer) good leggy bird, darker in colour; third (Lecher) fine, very large, leggy, very good head, and the fashionable colour; 1493 (Joint), and 1494 (Lowe) were also good.

**Leghorns.**—In Brown cocks (fifteen) first (Richardson) was a good-coloured bird, smart, fine in comb and ear, and good yellow leg. Second (Fowler & Co.) had a large thumb mark on his comb; in other respects a very nice bird. Third (Fowler) rather small, good ears, and a very well-formed comb; nice colour. 1591 (Philcox) good. In hens (also fifteen) first (Gibb) was a very good bird, capital in comb and lobe, and good yellow legs; second (Dr. Foster) was good in colour, nice comb and ears, nice size and legs; third (Philcox) was yellowish in lobe, very good in comb, and of good shape and colour; 1604 (Sleigh) and 1615 (Philcox) both good. In White cocks (fourteen) first-and-cup (Mrs. Troughton) was a stylish bird, capital in comb, and good ears and legs; second (Bradbury) was neat in comb, a good white, nice-shaped earlobe, and a nice-shaped bird; third (Fowler) good in comb, but rather roughish in ear. In hens (sixteen) first (Clemenson) was very good, legs good, very pure white, and capital comb and ears; second (Gibb) good in comb and lobe, but not so good in plumage as the first; third (Harvey) good in comb and lobe, bright yellow legs; 1681 (Gibb) capital in comb and lobe.

**Andalusians and Minorcas** were classed together. In cocks (twenty-three) first-and-cup (Mrs. Wilson) was a very fine Andalusian, well laced, large, and fine comb and limb; second (Elston) was a Minorca, good in comb and earlobe; a fine bird. Third (Boissier) again a Minorca; a good large bird, but a trifle imperfect in comb. 1646 (Elston) was a good Minorca; 1647 and 1649 (Stephens), 1651 (Mrs. Cross), and 1656 (Brooke) were very nice Andalusians; 1658 (Harwood) a very good Minorca, capital comb and lobe. In hens (nineteen), first (Barton) was a Minorca, splendid in comb and ears; a fine large bird. Second (Stevens) an Andalusian; a good large bird, nice in colour, and good in comb and earlobe. Third (Mrs. Wilson) was also a very good Andalusian. 1674 (Brewer) and 1681 (Briggs) were very nice Minorcas; and 1684 (Mrs. Troughton) a good Andalusian, rather small in comb. In old Sultans (twelve) cup (Atkinson) were fine in crest, and a very good pair. Second (Damant) good; the hen better than the cock. Third (Mrs. Christy) cock very good in crest; hen also good, but smallish crest. Fourth (Mrs. Gilpin) good, nice crests. In young birds cup (Eyles) were a very good crested and well-feathered pair; second (Nicholson) good in crest; third (Mrs. Christy), the cockerel better in shape of crest than the pullet; fourth (Rev. J. P. Wright) a nice pair, the pullet rather small and young.

The Selling classes contained many very cheap birds, and in these a great number changed owners. We noticed many birds that would have been very cheap at double the price, not merely amongst the prize birds, but also amongst the commended and highly commended birds. To particularise amongst these would be an invidious task.

Game Bantams were numerous and good, though many of the best are unnoticed. In Black Red cocks (thirty-five in number)

first-and-cup (Walton) was very fine and rich in colour, smart, fine in head, and very leggy; second (Hore) was rather large, good in style, and very long on the legs; third (Brownlie) nice in colour, good in head, and very smart; fourth (Stretch) was small and good; 2178 (Anna) very good style, 2185 (Addie) very smart and good in head, 2191 (Duncan & Kennedy) rather large, 2192 (Nelson) a good bird, and 2203 (B. Bavis) good. Hens were good, and the winners were all good. None of the other Game Bantam classes numbered so many pens as the Black Reds, but there were first-class birds in each class. In Japanese first (Mrs. Woodcock) were small Whites, in very fine feather and condition; second nice Cuckoos; third (Heald) good Whites; 2846 (Heald) also good White; 2849 (Mrs. Brassey) good Blacks; 2851 (Thorpe) lemon, good. In Sebrights only eight pens were entered; all Silvers excepting one, and all noticed. First (Burnell) a splendid pair, very clear, and distinct in lacing; second (Leno) a capital pair of Golden; third (Stephens) Silvers, very finely laced; the other five pens were all very good, and worthy of their cards. In the Variety Bantams (ten) first (Crowther) were handsome little clean-legged rose-combed Whites; second (Duckworth) very pretty Cuckoos or Scotch-Greys; third (J. Wood) White-booted, good and very clean; 2874 (King) very good White-booted.

All varieties of Ducks were well represented, the larger sorts being very good in size, and other points also; the ornamental varieties being very beautiful.

#### HAMBURGHES.

These birds held their position well; the five varieties mustered over 160 pens. The first (Bracewell) Golden-spangled cock was a good all-round bird with a capital honestly shown comb; he would stand with his tail wry in the pen, but this by no means proves that it was not really straight. Second (Blakeman) a nice smart bird with wonderfully spiked comb, good colour but breast too much laced. Third (Crosthwaite) neat in comb, like a pencilled bird, with a fine outline of form; his tail hardly fully grown yet. 1088 (May) very highly commended, a nice bird. Hens (Jackson) first-and-cup well shown, and good all round; second (Duckworth) had larger moons than the first, but was not in such condition; third (Bracewell) smaller spangling but glossy, and ground colour rich and good. Silver-spangled cocks were the smallest Hamburg class. The cup (Beldon) cockerel was a most perfect bird in every point, his neck hackle perfection, unfortunately he has lost a sickle; second (Cannon) a bird with a good comb and nicely spangled tail, his lobes not very smooth. The first (Ashton and Booth) hen was the most evenly-mooned bird we ever saw, and her moons the right size; second (Beldon) apparently a pullet with a wonderful green gloss on her spangling; third (Beldon) a hen which we thought equal to the second.

The first (Morris) Golden-pencilled cock was of the right colour in general but too brown in tail, and his tail small and mean; second (Duke of Sutherland) a far better bird to our fancy with the most beautifully laced tail we ever saw; third (Bell) good in carriage and fair in colour, but with a bad, and we suspect trimmed comb. The first (Beldon) pullet was very perfectly pencilled, some would think her bars a little too broad, but we do not, and she has that unusual accompaniment of good pencilling and a really clear hackle; second (Bell) had a good comb and black marking though it might be finer; third (Tickner) very finely pencilled.

Silver-pencilled cocks numbered eleven, not remarkable in quality. First (Bracewell) had a nice honest comb (indeed throughout these classes a great improvement is taking place in this respect), good carriage and well-laced tail; second (Snell) a fair bird all round, comb not so good as the first; third (Beldon) too yellow. None were noticed beyond the prize birds. Of the hens first and second (Beldon) were as like as possible and well barred; third (Kilby) good in comb, too squat a bird. Black cocks made a very large but not a very good class. First (Kelleway) a lovely bird in carriage and extremely green in gloss; his comb strangely perfect; second (Copeman) fairly green, very good in lobes; third (Gilroy) a fair bird which did not stand well. The first hen (Kelleway) had a bird of fine shape in the pink of condition; second (Gladstone) glossy and good in shape, not good in comb; third (Painter) good in form, too blue in colour; we much admired 1221 (Garnett), and should have put her second.

Any other distinct variety.—This was a fairly interesting class; it is a great pity that the names of the breeds are not printed in the catalogue. First (Swinburne) came *La Flèche* chickens, a fine pair; second, Miss Hubbard's grand Scotch Greys; third (Holmes) very good Silkies. It seems most strange that at a show of the size and importance of the Palace there should not be a class for this variety. Next to them were another very nice pair of the same breed. Among others were shown two pairs *Courtes Pattes*, some Indian Game, and a pair of Blue Bredas from the yards of Mr. J. C. Fraser, who seems great in picking out curiosities.

The basket show was an interesting one considering the short time that the competition had been announced; the collection of baskets, about thirty, was very good. The Judges went in for simplicity of construction; we regretted that one or two ingenious novelties did not take their fancy. First went to Mr. G. W. Hen-

shall of Gorton, Manchester, for a round lined basket with two handles, and half the top of close work; its price 8s. 6d. Second to Mr. R. Stevens, basket maker, Bracknell, Berks, for a simple handleless round lined basket; price 5s. 6d., and cheap too. Third to Mr. W. T. Elmore of High Street, Leicester, for a very pretty little double basket, price 10s. 6d., and not at all dear for the work in it. Hints might be taken from many of the other baskets. We thought one shown by Messrs. Boulton & Paul by far the most ingenious in the Show. It had a well-arranged place for feeding birds from without, and might with some modification be made useful for exporting birds. There certainly must be something in it, for we saw that it was bought by so practical a fancier as Mr. S. Matthew. Good double baskets with single fastening came from Mr. G. P. Pointer of 80, Goswell Road, better perhaps in design than in finish. A hint, too, we took from one from Mr. Balter of Hemel Hempstead. The opening part of the lid was hinged on a piece of wood, giving it much firmness. We hope that before the next Palace Show basket makers will have time to think over the requirements of exhibition baskets, and produce some really practical improvements. The Poultry Club also promises for next year liberal prizes for the best coops or pens for the export of poultry.

Sales were not by any means so good or so numerous as in many years, still some are worth recording. Mr. R. A. Boissier's cup Silver-Grey Dorking cockerel was claimed for £20; his first-prize hen of the same breed for 12 guineas. Mr. Sharpe's wonderful Partridge Cochinchina cockerel for £68. Mr. Turner's cup White Cochinchina hen for £18 7s. 7d. Dr. Snell's third White Cochinchina hen for 10 guineas. The Duke of Sutherland's second-prize Golden-pencilled Hamburg cock for 10 guineas; and Mr. Howard's cup Rouen Duck for £18.

### CANARIES AND RED MITES.

IN reply to questions that have been submitted, we may state that Canaries are more liable to disease when they are tormented with red mites. The vermin troubles young birds more when in their first or nestling feathers than they do old birds. We have often gently approached the cages where young birds have roosted, and with the aid of a lighted candle seen the mites running in and out of the birds' feathers "like dogs in a fair," and noticed the poor birds shiver and tremble as it were with the irritation caused through the vermin annoying them. Young Canaries are mostly troubled about the wings and along and betwixt the butt ends of the pinion feathers. The birds will show traces of the vermin along the webbing of their flight feathers, which will appear spotted with small grey specks. Young Canaries much infested in their nests rarely make strong birds, and many a healthy brood of young birds dwindle away through the tormentors, which drain the young birds of their blood, and weaken the hens so that they become restless at roosting time, and either cause their offspring to die by being sat upon too closely, or otherwise not being kept sufficiently nurtured. When young birds in the nest become pale in their mouths and crops and bear a sickly hue, in most cases it is brought about through vermin. Changing the old nests for fresh ones is the best remedy to keep the young if vermin are about. If confident the birds are free from the enemy, we would prefer the birds being reared in the nests the parents had prepared, for as a rule the birds do much better when they are not meddled with. Vermin not only secrete themselves in the cages, but at times small clusters may be found about the sides and more especially the necks of the food fountains. As to setting traps, we have tried hollow perches and placed shallow vessels with water beneath where the birds are likely to roost, in each of which many vermin may be caught, but still, like flies, there are always many more to supply their places. We once heard a fancier remark, "I have the red mites so numerous, I think they are great-grandfathers in four and twenty hours!" We do not place much faith in the above ingenious modes of capturing them, for whilst so doing we are only prolonging the misery of the birds by allowing the vermin nightly to weaken them. The most effectual way is to remove the birds away from the infested cages, which should afterwards be effectually cleansed as described in the Journal, page 262. The walls where the cages hung must likewise be looked to. The mites may not be got rid of at once, and perseverance is necessary. It may be afterwards ascertained if the birds are still troubled with the pests by throwing a white linen cloth over the cage at night time. If there are any about the cage it will be next to a certainty that upon examination next morning some of the vermin will be found adhering to the cloth. Whilst at the recent Norwich Bird Show we had a very interesting discussion upon the subject with a gentleman deeply interested in the bird cause. We came to one opinion as to how the Canary bug or red mites were brought about, but how to prevent them was another matter entirely. We informed him that we had in numerous instances seen young featherless birds in their nests completely infested with the vermin in their ears and nostrils, but we were surprised when he told us that in several cases of *post mortem* examinations of birds the presence of red mites had been clearly traced to the pericardium of the heart.

This being the case there is no wonder at so many deaths occurring and giving previous signs of inflammation. The subject is worthy of further investigation.—G. J. BARNESBY.

### VARIETIES.

WE are glad to see that railway companies are beginning to see the benefit which accrues to them from poultry and Pigeon shows. The Midland Company send round circulars before great shows inviting exhibitors to send birds by that line, which we believe can be recommended. The L.N.W.R., too, is advertising the hours at which special through vans from the north to Birmingham will leave the greater stations.

AN Australian agriculturist writes as follows on the relative value of Shorthorn and Hereford cattle, "Reared under exactly the same conditions, and fed side by side on the same pastures, an excellent opportunity is afforded for contrasting the qualities of the various breeds of cattle, the test being an exceedingly fair one, as no hand feeding is given, unless possibly a little hay thrown on the pastures for a few weeks in spring, and no animal ever being in a house or shed till driven into the slaughter house. The two favourite breeds are the Shorthorn and Hereford, and there can scarcely be a doubt but that the latter is the most valuable. It is hardier in constitution, and stands the weather better than the thinner-skinned Shorthorn, holds the flesh and internal fat longer, and recovers condition quicker in spring, while being quite as easily fed and attaining as heavy weights at quite as early a period of its existence."

THE Exhibition of cage birds held in conjunction with the chrysanthemum Show at Southampton on the 18th and 19th inst. proved a great success. In no class throughout the schedule were there any blanks, and there was keen competition, notably in several of the canary classes, the Belgian, crested Buff Norwich, clear yellow or buff, ditto, and in British birds (blackbirds, thrushes, and starlings), and any other variety of the same (the latter a most interesting though mixed class). The special prize presented by Mr. R. Parker, J.P., for the best bird in the Show was deservedly awarded to a glossy starling exhibited by Mrs. W. C. Drummond. It was a lovely bird, of rare plumage and perfection of growth, and formed a great attraction. Mr. Walter Billett, High Street, had the superintendence of the birds, and the Show Committee consisted of Capt. Gibbs (Chairman), and Messrs. G. Billet, E. Chamberlain, W. Knight, G. T. Pope, W. H. Squibb, and H. Young. The Judge was Mr. F. W. Wilson of the Crystal Palace.

WE often have regretfully to notice the decline of the interest in poultry and Pigeon shows taken by the general public after they have become established institutions for a few years. We have been sorry to receive a fresh instance of this in the statistics of the money taken at the door of the late Oxford Show. At the first Show held there in 1872 the receipts were about £147, at the last £56.

THE CHERSE AND BUTTER FACTORIES OF CANADA.—From the official returns published by the Dominion Government, it appears that the quantity of cheese exported from the Dominion rose from 4,508,870 lbs. in 1869 to 89,871,189 lbs. in 1878, being an increase of 84,867,769 lbs., or not less than 774 per cent. in nine years. The value of the cheese exported in 1869 was 549,572 dol., while in 1878 it was 4,121,801 dol., an increase of 660 per cent., representing an average fall of about 14 per cent. in the price of the commodity. In 1869 the quantity of butter exported was 10,858,268 lbs.; in 1878 it was 18,504,117 lbs., being an increase of 2,650,849 lbs., or 244 per cent. The value of the butter exported in the earlier year was 2,848,270 dol., against 2,474,197 dol., an increase of 54 per cent., showing that the average price of butter was about 15 per cent. lower. Of these two articles of dairy produce Great Britain took the bulk. Thus in 1878 she bought 11,401,165 lbs. of butter and 87,648,008 lbs. of cheese from the Dominion. This vast increase in the cheese trade is due to the development of cheese-making under the factory system. It has become the practice now for farmers within a certain radius to send their milk to central establishments where the manufacture is carried on wholesale. Canadian farmers discovered only a few years ago that there was a great advantage in the way of economising labour and manufacturing expenses to be gained by clubbing together. It was no longer back than 1874 that the quantity thus turned out began to exceed 20,000,000 lbs. in a year, since which time the amount has been almost doubled. Factories are now in operation in nearly every section of the province of Ontario or Upper Canada.

CATTLE plague, according to the current number of the "Veterinarian," is reported to have existed during the month of October in the Governments of Bessarabia, Volhynia, Ekaterinoslav, Podolia, Taurida, Kherson, and Petrokoff, in Russia. The disease is also reported to have appeared in Russian-Poland, in the neighbourhood of Lubtenitz, on the Silesian frontier of Germany. In Austria cattle plague has broken out in the Government districts of Littai and Stangenplane, in Carniola; it is also



said to have existed in two or three villages near Rugusa, in Dalmatia.

### NEW HORIZONTAL OCTAGON HIVE.

I PROMISED to give your readers an account of Mr. Paterson's success with his new hive. I would have done so sooner, but a number of important engagements came in the way. I mentioned in my first communication that the swarm which he turned out of their comfortable quarters in the month of April, while snow still lay on the ground, was the weakest in his apiary, and I predicted all manner of evils in consequence. The season, the swarm, and the novelty were all against him; but, like all true inventors, Mr. Paterson was not to be daunted.

As I mentioned in my former article the bees at once took to their new abode, and commenced work with a will. As the month wore on the appearance of brood was most encouraging. The shape of the frames and that of the clustering bees coinciding so exactly greatly favoured the hatching process, and before July had well begun several frames had to be added. By the end of July the hive was quite a sight, and the merry hum of the bees as they went cut to their work in crowds gave full proof of the health and prosperity that reigned within. It was soon necessary to form an artificial swarm, which in this wretched season and at an altitude of 600 feet above the level of the sea was a thing to be spoken of. In the course of a month the swarm had got alongside the parent hive, and if there had been a longer season I am not sure but that it would have outstripped it. For this, too, there was a reason. The original size of the octagon was 18 inches inside measurement; but Mr. Paterson thought that, safely and with advantage, it might be extended to 14 inches. This gave an immense breeding and storing surface, every frame containing upwards of six thousand cells, a larger surface than that contained in any frame which we have ever seen. The result has so far justified this extension as indicated above, for breeding on a large scale has unquestionably gone on, the bees with their queen evidently chiming in with the idea. An experienced bee-keeper at the Perth Show urged that with such a mass of comb, brood, and honey in each frame, removal to the heather would be impossible owing to the risk of a breakdown, but he overlooked the additional support which the oblique upper and under sides of the octagon afford, thus counteracting the supposed danger. But the experiment has not been tried.

In all the apiaries of the district super honey has been almost, I might say altogether, a failure. I took a few pounds from a rectangular plaster hive which was not allowed to swarm, and whose population consequently could be counted by myriads. Mr. Paterson, however, who was nearer the heather, took from his new hive 16 lbs. in boxes and 5 lbs. from the combs, leaving a large supply for winter use. The other twelve hives were a complete blank. This is all that can be said for the present. But he anticipates another advantage. The bees are clustering lower down on the comb than he ever saw them, and he fully expects from the arrangement of the stores all round the swarm that there will be no need for the bees removing from comb to comb all the winter through, thus saving serious risk, as every bee-master knows to his cost, the scarcity of supply necessitating the removal, and paralysis from cold frequently occurring in consequence. Next spring I will return to the subject.—ALFRED.

### A MISTAKE.

A GENTLEMAN in Derbyshire writes to me as follows, relative to a lecture on "Modern Bee-keeping" delivered at Belper on November 4th:—"The lecturer stated you have recently changed your opinion as to the relative advantages of large straw skeps and wooden bar-frame hives, and that you now recommend the latter. As this is so very different from the view expressed in your book I think there may perhaps have been a mistake made, and therefore I shall be glad if you will kindly inform me if the fact is as the lecturer stated. I am sorry to trouble you, but my excuse must be the importance which you attach to using the best kind of hive."

I am obliged for the information conveyed in the above extract, and beg leave to say here that the lecturer has made a mistake, for my views on the relative advantages of straw hives remain unchanged and unmodified. I am increasing the number of my stocks, all made of straw, because I prefer them. Some seven years ago I received a letter from a working man in the south of England, who ventured to predict that I should be converted and believe in the bar-frame system before I die.

About two months ago a nobleman who was then travelling through England called to see me and asked many questions about bees, one of which was in these words:—"After all that has been said in favour of bar-frame hives do you still prefer those you have used and recommended?" "Yes, most certainly" was the answer given to this question.

I shall be pleased if the gentleman who lectured at Belper on "Modern Bee-keeping" be made acquainted with the fact, that while I notice and welcome all improvements in every school of

apiculture, I am quite satisfied with the hives I have long used.—A. FETTERGREW.

### OUR LETTER BOX.

COVERING HIVES (J. G.).—Your wood covers—2 feet square and 1 foot high, shaped like a dog kennel—will protect your hives from rain, and a good packing of soft dry hay between the hives and their covers during the cold weather of winter and spring would help your bees much and add to their comfort; but such small houses made of thin materials should be painted white in summer to reflect the burning rays of the sun. We have known combs melt and fall, and the bees smothered in such houses under a hot sun. Any time next month or in January remove your hives into the place where they have to stand. All should be removed at once, and every vestige of their present stands obliterated.

BEE-KEEPING IN NEW ZEALAND (M.).—"M." would like to know some of the chief difficulties she would have to contend with in keeping bees in Auckland, New Zealand. She would feel obliged for a few suggestions on their management out there. They are said to swarm at all times, or at any time of the year, while owing to the weather never being cold enough to keep them at home, they do not care to store. Is this really the case? We shall be obliged if any of our readers, acquainted with bee-keeping in that part of New Zealand will favour us and our fair correspondent with some reliable information on the points inquired about.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.						Rain.
1879.	Nov.	Barom. at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Air at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
We. 19	Th. 20	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
		30.319	44.1	43.4	N.	42.0	48.6	41.2	64.7	30.3		
		30.113	33.9	32.5	N.	41.4	40.5	32.0	63.3	37.3		
		29.765	33.8	32.5	E.S.E.	40.0	24.0	32.0	42.0	0.270		
		29.805	33.1	31.6	N.N.W.	39.0	33.7	31.3	41.3	38.0		
		29.995	34.8	33.3	W.	38.2	33.2	25.5	33.3	22.5		
		30.002	33.5	33.5	N.	38.0	36.0	27.2	39.2	24.3		
		30.207	34.0	34.0	N.	37.9	39.8	31.2	58.0	23.3		
Means.		30.044	33.9	33.4		39.5	37.9	31.5	52.8	27.7		

### REMARKS.

- 19th.—Damp morning, slight rain, fine after 10 A.M. with intervals of bright sunshine; very fine sunset; cloudy evening.  
20th.—Slight snow at 8.30 A.M., very heavy 9 to noon, slight at intervals after 1 P.M., some bright sun about 0.15 P.M.; ground white with snow all day.  
21st.—Foggy morning, thickly falling snow from 11 A.M. to 0.30 P.M.; 8.30 P.M. snow commenced again.  
22nd.—Further fall of about a tenth of an inch of snow during the night, making a total of nearly 4 inches; dull cold morning, slight snow shower 9 A.M.; very dark in the forenoon; bright from noon till 3 P.M.; frosty starlight evening.  
23rd.—Very cold morning, snow still on ground; slight fog, but sky nearly free from cloud; fog gradually increased, and was dense from 6 till 9.30 P.M.  
24th.—Dull cold day, partial thaw; slight rain in evening.  
25th.—Little snow still on the ground, fine with bright sunshine; drizzle in evening.  
A very cold week, with an unusual amount of snow for the season.—G. J. SYMONS.

### COVENT GARDEN MARKET.—NOVEMBER 26.

OUR market still keeps quiet, home and continental supplies being short. St. Michael Pines now reaching us have materially affected the value of home fruit, the former having the call. Kent Cobs selling freely.

### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	3	0	4	6	Melons.....	each	0	10	0
Apricots.....	dozen	0	0	0	Nectarines.....	dozen	0	0	0
Cherries.....	box	0	0	0	Oranges.....	100	4	0	0
Chestnuts.....	bushel	13	0	16	Peaches.....	dozen	2	0	0
Figs.....	dozen	0	0	0	Pears, kitchen.....	dozen	0	0	0
Filberts.....	1b.	0	1	0	Pears, dessert.....	dozen	2	0	0
Cobs.....	1b.	0	1	0	Pine Apples.....	1b.	3	0	0
Gooseberries.....	1b.	0	0	0	Pines.....	1b.	3	0	0
Grapes, hothouse.....	1b.	1	6	4	Raspberries.....	1b.	0	0	0
Muscats.....	1b.	3	0	0	Walnuts.....	bushel	14	0	0
Lemons.....	100	6	0	10	ditto.....	100	0	0	0

### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	3	0	4	Mushrooms.....	pot	1	0	0
Asparagus.....	bushel	0	0	0	Mustard & Cress.....	bushel	4	0	0
Beans, Kidney.....	1 sieve	0	0	0	Onions.....	bushel	3	6	0
Beet, Red.....	dozen	1	0	2	Pickling.....	quart	0	4	0
Broccoli.....	bushel	0	1	6	Parsley.....	dos. bunches	3	6	0
Brussels Sprouts.....	1 sieve	3	0	3	Parsnips.....	dozen	0	0	0
Cabbage.....	dozen	1	0	3	Pears.....	quart	0	0	0
Carrots.....	bushel	0	4	0	Potatoes.....	bushel	3	6	0
Capicums.....	100	1	2	0	Kidney.....	bushel	4	0	0
Cauliflowers.....	dozen	8	6	0	Radishes.....	dos. bunches	0	0	0
Celery.....	bushel	1	2	0	Rhubarb.....	bushel	0	0	0
Coleworts.....	dos. bunches	3	0	4	Salsify.....	bushel	0	1	0
Cucumbers.....	each	0	6	1	Scorzonera.....	bushel	1	0	0
Endive.....	dozen	1	0	0	Seakale.....	basket	2	0	0
Fennel.....	bushel	3	0	0	Shallots.....	1b.	0	0	0
Garlic.....	1b.	6	0	0	Spinach.....	bushel	0	0	0
Herbs.....	bushel	0	2	0	Turnips.....	bushel	0	0	0
Leeks.....	bushel	0	2	0	Vegetable Marrows.....	each	0	0	0

## WEEKLY CALENDAR.

Day of Month	Day of Week	DECEMBER 4-10, 1879.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock after Sun.		Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.			
4	TH	Linnean Society 8 P.M.	48.1	36.4	42.2	7 50	8 51	9 29	11 23	20	10 52	338						
5	F		48.0	35.2	42.1	7 51	8 51	10 44	11 41	21	10 29	339						
6	S		48.2	36.7	42.4	7 52	8 50	morn.	11 55	6	10 6	340						
7	SUN	2 SUNDAY IN ADVENT.	48.4	35.5	43.5	7 54	8 50	0 0	0 13	23	9 42	341						
8	M		46.9	33.5	40.3	7 55	8 50	1 19	0 30	24	9 17	342						
9	TU		46.7	34.9	40.8	7 55	8 49	2 41	0 50	25	8 53	343						
10	W	Society of Arts, 8 P.M.	47.0	32.8	39.9	7 58	8 49	4 8	1 15	26	8 26	344						

From observations taken near London during forty-three years, the average day temperature of the week is 47.8°; and its night temperature 35.4°.

## EXHIBITING ROSES.

It is common, doubtless, with many of your readers I have received and carefully perused the new number of Mr. William Paul's "Rose Annual," containing, among other articles, an interesting letter from "WYLD SAVAGE" on Rose exhibiting, its expenses, &c. Since the writer says that the number referred to is a Rose Annual, not a newspaper, it must be at least twelve months before an answer can be given in it. I must ask him to accept an apology, if he thinks one necessary, for any comment upon his letter, which I only write because I fear some readers may be deterred from Rose exhibiting by the expenses stated to be necessary, or may indulge in ill-founded expectations as to their probable chances of immediate success, and may be induced at least to wait a year before beginning their preparations, or may be disappointed where they looked for success.

First, the writer starts with two assumptions—that the exhibitor is to begin his career in nine months from this time, and then that he is at once to make a bold dash for metropolitan and other central shows, and this with purchased Roses. Now unless Roses behave very differently in his soil than they do in mine, any attempt to cut a good box from bought Roses the first year will only end in failure. I find that from however good a grower they may come, and however carefully they may be tended, the check by removal is so great that it is hopeless to expect their summer blooms to be up to the exhibition pitch. By plentiful watering during dry weather they will make fairly good wood in summer and will, perhaps, flower well in autumn, but their earlier blooms will have no chance with those cut off established stocks, especially from those which have never been disturbed since they were first budded. Again, however large and good the collection may be, the chance of success at the central exhibitions will be small until the grower has learnt (what only experience will teach him) how best to cut, mount, show, and carry the blooms.

Acknowledging the writer's experience as at least more varied than my own, I should still wish to give my own ideas of the expense and process necessary to secure moderate success at first, and to give a reasonable hope of the highest honours in the future.

Assuming, as "WYLD SAVAGE" suggests, twelve hundred Roses in sixty varieties as the number which the amateur is prepared to grow, let him purchase (in 1879, say) three of each for budding from, at a price for dwarfs of £7, and twelve hundred stocks (this allows two hundred for blanks). These latter will, if standards, at 5s. per hundred, the price I pay, come to £3. If dwarfs, Briars or Manettis, they will, I presume, be somewhat less. For my own part I buy and prefer dwarfs, but bud half-standards simply because, doing my own propagating, I find knees and back not so supple as they were.

Manure varies in price according to locality. I could buy good farmyard manure for half the price "WYLD SAVAGE" pays, but to make the comparison fair I will take

his price and say £20 for manure for twelve hundred Roses. I, however, have plenty of manure made on my own premises, and pay £2 or £3 for soot.

Now in no case, as I said before, would the rising exhibitor have any reasonable hope of success in 1880, and in 1881 he would have the same number of Roses as if he had bought his twelve hundred in 1879, and the account would stand as follows:—Roses, £7; stocks, £3; manure 1880, £4; manure 1881, £20; total, £34, as against "WYLD SAVAGE'S" £60 or £90, as the case may be. To this we must add what he omits—£8 for boxes, tubes, and other appliances.

The exhibitor's travelling expenses would not be much the first two or three years. He would confine himself, if he is wise, to local shows; and may be sure of this, that till he can hold his own and more at these it is no good trying a higher flight. I myself cannot spare time and money for the great shows, taking up three days in preparation, showing, and returning; but can find half a dozen local shows within an hour or so by rail. After a few years he may try his luck at the great shows, but not successfully, I think, with twelve hundred Roses.

Again, the writer mentions the necessary disbudding as a great drawback to the pleasure of exhibiting, especially where there are more than one in the family to be gratified, and he certainly does disbud with a vengeance. "The plant is only allowed to grow three or four blooms." Is this necessary or advisable? I trow not. I have had, as I said, some thirty years of Rose-growing, and have tried all kinds of experiments, and the conclusion I have come to, that every shoot we grow, if they are not allowed to be too crowded at first, may bear a flower without detriment to plants or blooms. The removal of all the buds from any shoot simply starts the wood buds below, and drives no strength into the other blooms. You secure an earlier mid-summer shoot and that is all.

I may say that I have no such difficulty at home as "WYLD SAVAGE" has. This vanishes where the helpmeet was brought up as girl almost next door to a veteran exhibitor, and, early knowing what a Rose should be, thinks no exhibition variety worth looking at if not up to exhibition standard. Besides, I pay expenses and she takes the prizes.

In another point "WYLD SAVAGE'S" practice differs from that of other writers on the subject. He "thinks it a great mistake to apply manure at the time of planting." This, on the other hand, is recommended by all the authors whom I have studied, and their recommendation is confirmed by my own experience. Soils differ, and what Roses may suit me in a strong clay may not suit him.—DUCKWING.

## PEARS VERSUS PEACHES.

I AGREE with the excellent remarks of "ESSEX" (p. 401) on this head; to only one point therein do I make an exception, and that is his considering Marie Louise to be so unimportant as to exclude it from his list. My opinion is that were this Pear generally excluded from gardens we should experience a serious loss. Indeed out of a number of varieties grown my employer says Marie Louise is the

best; and certainly fine ripe fruit of this Pear is as good as any gentleman could desire on his table.

I have for some years had very fair crops of Marie Louise on a tree trained horizontally on a wall; it has borne well every season. This year the standards and pyramids have borne very poorly. The cordon mode named by your correspondent would be a capital plan for one to try to prove the varieties best suited to a place, though a good well-developed fan or horizontally trained tree on a wall would, I think, be the most profitable if one only could be sure of what to plant.

Last winter I suggested a Pear election, but the idea was not carried out. It is to be hoped, however, that this subject will have the full attention its merits deserve, as certainly the Pear is the very best of our hardy fruits. This year with me Pears have been about an average crop, better than Apples. Jargonelles produced a good crop and of fair quality, though this Pear does not keep long. Williams' Bon Chrétien was fair, but this Pear is very uncertain in quality, though for appearance it may be all that can be desired. After this we had in use Comte de Lamy and Louise Bonne of Jersey; now we are using Marie Louise. Beurré Clairgeau has had a fair crop this season—a fine-looking fruit, but not of superior quality. Beurré d'Aremberg always bears freely; though it is only second-rate for dessert, it is very good for stewing.

Good Pears on walls would prove far more profitable than Peaches or Nectarines. However, making the change, as your correspondent suggests, is not always convenient. Last year we cut down a number of well-developed standard Pears of useless kinds. This winter I would, if permission were given, remove a number from the walls, and occupy the space with better varieties.—R. M. A., *Cheshire*.

### GLADIOLI.

JUST at this season, when the Gladioli are ceasing to bloom, the question arises about the policy of lifting them and storing them for the winter. I recently sent for Mr. D'Ombrian's shilling book on the Gladioli, and I find that he never once mentions the matter; he seems to take it for granted. Therefore, as this book was written a few years ago I presume that it is a modern idea. Mr. Douglas, I think, strongly advises cultivators to leave them in the ground through the winter; but large growers in the midland counties as strongly advise me to lift them. My friend Mr. Boscawen, the great horticulturist in Cornwall, however, advises me to leave them in the beds. He says he has adopted this course for years, and has found it answer extremely well. Now it may be a question of climate and deep planting, and one for which it is impossible to give a formal rule; but still a few opinions on this point which are formed from the results of experience would be acceptable perhaps to more than one.

The Gladiolus is such an exceedingly handsome flower, there are so many hundreds of fine varieties, so many shades of colour are being introduced, and, what is best of all, the French varieties are so cheap, that anything that throws light upon the culture of these charming flowers must be acceptable.—WYLD SAVAGE.

### AGAINST HARD PRUNING.—No. 2.

HAVING in a previous paper alluded more particularly to the Apple, I shall now suppose the question put to me, "Well, what about Pears? Surely you would not recommend us to throw away our pet pyramids and cordons?" This part of the subject is not to be disposed of in so simple a manner as that which concerns Apples, but must be divided and subdivided according to size of fruit, suitability of climate and soil, habit of particular varieties as to growth, fertility, &c. There are some varieties quite as hardy as Apples, and which seldom fail as standards to produce a crop. I recommend such to be planted with and treated exactly like standard Apples—i.e., left to grow in a natural manner. I should be badly off at the present moment but for such a tree of the good old Comte de Lamy, which in this ungenial season has borne four or five bushels of fruit, not large certainly, but of excellent quality. This variety never fails as a standard, is almost independent of the seasons as to quality, and, unlike many of the more showy varieties, lasts a month or five weeks in condition. Crasanne is another of fair quality which bears well as an unpruned standard, and ripens with me about Christmas time, when it is often extremely useful, as a quantity of one sort may then be required for a festive gathering. In addition to these I

recommend for the same treatment Jargonelle, which always bears best on the young wood, Williams' Bon Chrétien and Joséphine de Malines, although this Pear never has a good flavour with me, it being bitter, and I have it in almost every conceivable position. Everybody else says it is a good Pear, and I must bow to the majority. At any rate it is a good bearer. Also add Louise Bonne of Jersey, a sure bearer; Marie Louise, Fondante d'Automne, and Suffolk Thorn, a delicious little Pear. Beurré d'Amanlis and Beurré Hardy are larger, and if the situation is not too much exposed to rough winds they may be depended on. There are probably other varieties suitable for this purpose which do not occur to me at this moment, the principal qualifications for which are hardiness, productiveness, fair quality, and medium-sized fruit.

Next there are some Pears which, owing to their large size, require shelter from rough winds, but are sufficiently hardy to ripen both wood and fruit in an ordinary season without the assistance of a wall. I think it is generally admitted that a Pear which will come to perfection without a wall is best grown without it as far as quality is concerned, but here, of course, latitudes, altitudes, and seasons have to be taken into account. In some seasons such varieties as Doyenné du Comice, Thompson's, and Beurré Superfin are excellent from pyramids, but this year with me Thompson's has failed to fruit, and the other two are only half grown. As these, then, are three of the best Pears in existence we should provide for a failure in the open garden by having a tree or two of each against a wall. Finally, there are some Pears which absolutely require a wall and are worthy of it; such are Bergamotte Esperen, Easter Beurré, Gansel's Bergamot, Glou Morceau, Pitmaston Duchess, and Van Mons Leon Leclerc.

Now as to the manner of pruning. The wall being a necessity to certain varieties, it is, of course, useless to plant them there and let them grow wild. Some portion of the wall must be exposed to the sun's rays, and all the growth must be so exposed, or we defeat the very purpose for which the wall was built. Pruning, therefore, to a great extent is unavoidable; but let no one think pruning is an unmixed good, no plant can be cut back to the same bounds year after year without suffering from it in the course of time. I have met with trees which have been kept closely spurred-in for a number of years till they produced little else but fruit spurs, and the fruit was becoming less and less in size every year; notably of Van Mons Leon Leclerc on a south wall, which altogether refused to extend to the extremities of the branches. It was a model of training, but I wanted fruit. Some of the spurs which happened to have wood buds at the end were nailed back to the wall instead of being trimmed off in the usual way, and the result was almost like magic—the hidebound stems burst their bark, the fruit was larger even the first season, and by following up the system of encouraging extension the tree has always borne good fruit since, the present season not excepted. I hold, then, that as pruning is only a necessary evil, it should not be carried to extremes even with wall trees. Train the main branches thinly, so as to get the full benefit of solar heat; do not pinch too hard in summer, rather remove some of the shoots altogether; encourage extension at the extremities, and if that fails do not hesitate to encourage extension for a time wherever you can get it, for without it fruit of the best quality cannot possibly be produced continuously.

With pyramids I fail altogether to see the necessity for close pruning. A tree a yard high with a dozen fruits on it is pretty enough, but I do not consider it is more beautiful than a larger one, and I am sure you cannot obtain so large a quantity of fruit from a given space of ground. Knight's Monarch makes a particularly handsome tree if merely kept thinned without shortening the growth. I could point to three trees of this variety, each about 12 feet high and nearly as much through, brought into a pendulous habit by the weight of fruit, which are pictures of symmetry, and in which a robin could scarcely hide itself in summer. Jargonelle also makes a handsome tree treated in this way, and it always bears the best fruit at the extremities of the shoots. Fondante d'Automne grows more upright, but it, too, is very handsome if merely kept thinned. Joséphine de Malines has a habit of its own, its width being greater than its height. To sum up this part of the subject, I may say that I am convinced that where the soil is sufficiently holding to produce growth which is long and strong it is a folly to persist in growing pyramids, whether it be by using dwarfing stocks or by constant manipulation of the growth. In a very few years I expect Quince

and Paradise stocks to follow the road which I am now happy to see standard Briar stocks are taking, and we shall have discovered afresh the astounding fact that a very good Pear can actually be grown on a Pear tree—a fact tolerably well known to our great grandmothers, but one which we modern scientific horticulturists have either lost sight of or wilfully ignore.—WILLIAM TAYLOR.

### CLASSIFICATION OF ROSES.

THE article of the Secretary of the National Rose Society ("D., Deal"), on this subject calls for, and will doubtless receive, careful attention. The subject is one requiring very full discussion, and the present is exactly the time for beginning it. I will therefore state shortly my own ideas on the subject, following the lines he has laid down, in the hope that others also will express their opinions.

I am sorry to seem to differ in any way from so high an authority, but the National Rose Society Committee is very tolerant of variety. To begin with, I think the existing two classes are more generally called "Any kind" and Teas and Noisettes than Hybrid Perpetuals and Teas and Noisettes. Baron Gonella is a good solid Rose, even more likely to offer than Souvenir de la Malmaison as an "Any kind." In two Rose associations I have seen the exclusive Hybrid Perpetual class given up. I protest individually against turning Noisettes out of the Tea boxes. As it is, it is hard enough to stage twelve perfect blooms in this class; and if we are to lose Cheshunt Hybrid and the Noisettes very few indeed, except the largest growers and those who have glass, will be able to attempt this. I submit that Cheshunt Hybrid in the early bud stage is a great addition to a stand of Teas, however fatal it may be when it commenced fading—crimson colour is so much wanted; but here, of course, tastes may be hopelessly at variance. A difficulty now has most certainly arisen, and a question will have to be decided. I confess to myself inclining towards accepting the new Hybrid Tea class that has arisen, and I would relegate to it all Roses with unquestionable Tea or Noisette blood—e.g., even La France, Capitaine Christy, and Boule de Nègre.

I do not see my way to letting in any of these amongst the Tea and Noisette class for exhibition, and the "Any kind" class is already too large and too strong for some of these, so that I almost incline to suggesting a class of their own. Mr. Bennett has made such a grand addition, though I have not yet seen any of his Roses in full force, that Hybrid Teas may be expected soon to demand recognition. Only a few, perhaps, will be able to hold their own like La France in the "Any kind," and yet I should equally deprecate with "D., Deal," letting them all into the Tea and Noisette class. The poor Noisettes! I hope somebody else will feel for them as I do. Letting alone Maréchal Niel, who can take care of himself anywhere, and Céline Forestier, who is not very dependable, only think of Caroline Kuster, the excellent solid new lemon yellow, and Lamarque, how fine when not coarse—and lovely Narcissa, with its special fragrance; and that good clear solid yellow, again, Triomphe de Rennes, all extinguished for the future! I protest, on the behalf at least of these, most emphatically, and would rather add to this class than diminish its numbers, though I admit the great difficulty arising now of dealing with these new Hybrid Teas. It is very unlikely they would be seen much in "Any kind" boxes, and some have certainly too much Hybrid Perpetual blood to be admitted amongst Teas and Noisettes; hence the problem by no means too soon propounded by the far-seeing Secretary of the National Rose Society.—A. C.

### SHEFFIELD BOTANICAL GARDENS.

IN your issue for November 6th, page 363, is a well-written albeit brief notice of these fine old gardens, which I was very glad to see. I visited these gardens eight or nine years ago as a perfect stranger, and was charmed with them; I also found the geniality and courtesy of the able Director, Mr. Ewing, just as your representative has written. Ouvirandra had leaves 16 inches long and nearly 4 inches broad, and "lots on em" too. Platycerium biforme or P. stemmaria (I forget which) was very attractive growing in a flower pot reversed and suspended from the roof of a warm plant house. Especially delighted was I with the Ouvirandra and other rare aquatic plants, and the rare plants of particular rather than general interest which find a proper refuge in the classical old botanical gardens like

those of Sheffield, Oxford, Liverpool and others. I am sure you are right in your concluding sentiments with respect to Mr. Ewing, whom I have always found most generous in his aid and encouragement of younger men. As an instance of this please allow me to say that I recently asked Mr. Ewing for some rare plants; one was especially rare and valuable in the trade as well as in a botanical sense. This one Mr. Ewing could not spare from his own garden, but he took the first opportunity of procuring it for me from a friend. It now graces our collection, and I never look at its progress without feelings of gratitude towards its generous donor. The story is a true one, and the moral is not obscure.—A YOUNG CURATOR.

### CONSERVATORIES IN WINTER.

WELCOME as flowers always are, they are especially so in the bareness and gloom of winter. It is now that the conservatory is estimated at its true value, and when well cared for is very attractive to all. How to turn it to best account becomes, therefore, a question of importance. The frequent application for a heating apparatus simply for the exclusion of frost, apart from the question of economy, shows the prevalence of such ignorance about the necessary temperature of such a house in winter. Simply to exclude frost is not enough; we require a temperature sufficiently high to render the air tolerably free from moisture, cold moisture-laden air being fatal to foliage and flowers. A minimum temperature of 50° will suffice to effect all we wish, for in it plants will grow slowly, the foliage keep a fresh green healthy hue, flowers continue to expand and remain in beauty a long time.

Common Russian Violets planted in beds and borders among tall-growing plants continue flowering from September to March. Mignonette, sown in early spring and grown in pots, comes in with the Violets, which are transplanted in clumps from their summer quarters in the open air. Palms continue growing; not only the hardy Chamerops Fortunei, C. excelsa, and C. humilis; but Phoenix dactylifera and the very beautiful Phoenix reclinata, Latania borbonica, Areca sapida, Sabal Blackburniana, Calyptrorhynchus Ghiesbreghtiana, and others, all imparting relief to the brilliant zonal Pelargoniums that in such a temperature continue in flower throughout the winter.

Tree Carnations should also have a prominent place; they do not give "a blaze of bloom" like the Pelargoniums, but are nevertheless highly valued for the beautiful flowers they continue to unfold for so long a time. Raised by cuttings taken as early in the year as possible, and grown on through the summer, no plant can be more agreeable than the freshness and vigorous appearance of good specimens when brought into their winter quarters. Miss Joliffe, King of the Belgians, Marchioness of Westminster, Princess Christian, Queen of the Belgians, Rosy Morn, La Belle, Scarlet Defiance, and White Nun, are all good.

Chinese Primulas, Cinerarias, Cyclamen persicum, Libonia floribunda, Heterocentron roseum, Camellias, Oranges, Erica byemalis, E. gracilis and E. gracilis vernalis, Epacris, and such Fuchsias as Splendens, serratifolia multiflora, Dominiana, Beauty of Trowbridge, and Mrs. Burroughs, all combine to afford an ample variety of winter flowers. There should also be a fair proportion of such berry-bearing plants as Ardisia crenulata, Solanum Capsicastrum, Aucubas, and Iris foetidissima. Upon the value of Chrysanthemums during early winter I need not dwell; but attention should be called to the value of the Scabious for the conservatory in winter. I have some three dozen bushy plants just coming into flower raised from seed sown last March, which are exceedingly ornamental, and embrace shades of colour ranging from rich velvety black, through crimsons and pinks to pure white.

If possible avoid all staging in the interior of a conservatory, and also much formal grouping of plants for effect. Beds and borders with a carpeting of Lycopods, Musk, and Violets are always most liked. A few good well-grown plants are infinitely preferable to a crowd of rubbish, and by the exercise of a little ingenuity and taste the smallest building may be rendered attractive without formality.—EDW. LUCKHURST.

### MAGNUM BONUM POTATO.

IN the number for October 23rd your correspondent "AN OLD GROWER" states that it would be well if it could be stated to whom the credit is due of having raised the original Magnum Bonum Potato. I am given to understand that it

was raised by a Mr. James Clarke. I obtain this information from Messrs. Carter's farm seed catalogue for 1877, wherein they state that they have obtained their supplies from Mr. Clarke, who, I have since ascertained, resides in the neighbourhood of Christchurch, Hants.—FACT.

### AURICULA CULTURE.

WE of the older generation of florists are receiving some rude shocks to our nerves in the matter of Auricula growing. We never had woolly aphids in the days of our youth, and damp was the chief enemy we had to contend with; but other matters are also noticeable. One of the most successful growers in the north, Mr. Woodhead of Shobden Head, Halifax, grows all his plants now in highly glazed non-porous pots. This is a violation of all rules that have hitherto guided growers of plants, who have been specially warned against the use of such unscientific articles; and yet I am told by Mr. Rudd of Bradford that the whole collection is in the most perfect health—a testimony I can readily believe from some of the plants which I have seen, which were admirably grown. Mr. Woodhead tells me that the saving of time in watering is very great, for of course they do not require watering so often.

My friend Mr. Llewellyn, so well known as an enthusiastic horticulturist, and who has been so successful as an Auricula grower, has broken in upon the old established order of things, and in the cultivation of seedlings and offsets has adopted a plan which I think will be hailed with satisfaction by those who have a large number of plants; and having mentioned it to me, and being desirous that others should have the benefits of his practice, he has very kindly drawn out the following paper for the Journal, and I have great pleasure in forwarding it, hoping that it will commend itself to others as it has done to me.—D., Deal.

NOVEMBER would seem to be a dreary season to talk of spring flowers, and though it is the dull time for Auriculas yet in our spare moments we are never tired of thinking of them; and a proposal in our little fraternity of florists, while we are revising schedules and prize lists for 1880, of a special prize for seedlings which our energetic Secretary Mr. Douglas of Loxford is working at, leads me to think a few notes on the culture of Auriculas may prove of use to some who grow seedlings, and perhaps to others who have little time to devote to or space for the supervision of any beyond a few of the best.

Much has been written on the culture of the Auricula in pots, and I have little to add excepting my testimony to the necessity for cleanliness, dry surroundings in the damp season, and above all thorough drainage to prevent the pots becoming waterlogged. I wished to explain more particularly my plan of growing duplicates and seedlings for which there is no room in the Auricula house. For such varieties as Col. Taylor (Leigh), Anna (Trail), Prince of Greens (Headly), among the green-edged; Alexander Meiklejohn (Kay), George Lightbody (Headly), Lancashire Hero (Lancashire), among the greys; Smiling Beauty (Heap), Glory (Taylor), Catharina (Summerscales), among the whites; Lord of Lorne (Campbell); C. J. Perry (Turner), Pizarro (Campbell), in the self-edged class—a dozen which rank in the front, though followed very closely by many others well worth any cultivator's attention—pot culture is certainly advisable, with every care that can be bestowed. There are numbers of varieties to be found in every catalogue, well worthy of a place in a collection from their brilliance and beauty, but not worth growing for the exhibition table on account of some fault that is inexcusable in a florist's eye. Here let me observe that the price quoted in the catalogues is governed far more by the ease with which the particular variety is divided and increased than by its merit. For example, Summerscales' Catharina is a true and beautifully correct white-edged variety, only small, yet it is cheaper than many of inferior worth; and so will it ever be, those commanding the highest prices which most sparingly produce their offsets, and which are at the same time the most sought after.

Well, then, if the good varieties are few, yet many of inferior merit are worth growing. I wish to show how they may be grown with little trouble yet satisfactory results, and an experience of three or four years emboldens me to recommend the plan. First, at top-dressing time, which commences with the last days of January or the 1st of February, we find on our plants many offsets by which the stock is to be increased. Some are already rooted, and with these there is no difficulty, for they can at once be treated as established plants. Others,

however, have no roots, and here I cut off the little offset with a sharp knife, or break it off if it can be done easily, healing every wounded surface with finely powdered charcoal. These unrooted offsets are then inserted 2 or 3 inches apart in a small unheated propagating frame, in soil composed of silver sand and cocoa fibre. By the first week of May the whole of these, with scarcely an exception, will be well rooted and ready for their summer quarters. I then place them in frames, each of which is 9 feet long by 4 feet wide, with a gentle slope from back to front. In the bottom is a thorough drainage of broken crocks, then roughly cut turf, with about one-third of decayed manure and a small quantity of silver sand well incorporated. In this the plants are placed 4 inches apart, so that I find my frames hold about 140 plants each. The light of the frame is about 9 inches above the soil and is easily removeable in fine weather, and I have found small offsets have grown more rapidly under this system of culture than they would had they been brought on in pots. Once planted they are easily managed, for while the glass light protects them from storms it may be removed to admit a genial rain, and shading is easily applied in scorching sunshine. The saving of labour is so great that hundreds of plants may be grown where dozens were grown before.

The Auricula, and indeed most of the Primula family, may be moved when in full flower without injury; and I have dug up plants in bloom, potted them, and taken them direct from the protected border to an exhibition, and they have shown scarcely any signs of flagging then or afterwards, and the flowers have remained fresh for days after.—J. T. D. LLEWELLYN, *Ynnygerwn, Neath.*

### POND'S SEEDLING PLUM.

I FIND this a most useful kitchen Plum, forming an excellent succession to the Victoria, and in some respects proving superior to that good old variety, than which it is considerably larger, quite as prolific, but scarcely so good in flavour. This season, however, seemed to suit Pond's Seedling, as we never before had it so good, and although not good enough for dessert purposes generally, a few dishes we ventured to use of it at a large tenantry dinner were apparently appreciated. The cook prefers this variety to any when in a green state for compotes, tarts, &c., on account of the richness of the syrup it helps to form. We commenced sending them in when as large as good-sized Walnuts, and continued doing so at intervals till those left commenced colouring. These thinnings, too, materially benefit the remaining crops, in fact the operation is quite necessary if good fruit is wanted. The ripe fruit is very fine for either jam or tarts.

We only grow standard trees, and they very seldom fail to carry heavy crops. They are of very vigorous habit, but should be well pruned until a fine head is formed. When this is the case, which with us was about the third year after planting, the long strong shoots were not shortened, only judiciously thinned. At the same time, ours being a strong soil, we thought it advisable to root-prune, though only very lightly. On a light soil this operation, however, is scarcely necessary. The first season after this treatment we had a fair crop, the next and following seasons the crops were remarkably heavy. Nothing can be more ornamental than these trees when the fruit is ripe, the long and slightly arching branches throughout being evenly laden with fine bright red fruit. Very little pruning is now required beyond shortening back any very straggling shoots and thinning out where likely to be too crowded.—W. IGGULDER.

### DODECATHEONS (AMERICAN COWSLIPS).

CONSIDERING that some of the members of this genus have been introduced into this country from the western hemisphere over a century it is rather remarkable, if we do not take all things into consideration, that they are not more frequently met with; but if we remember that they are placed in the category of hardy plants there is no place for surprise, since many of the most beautiful floral gems have been despised simply because they did not require a glass erection and a certain degree of temperature, as many of the more favoured pets of the general plant-grower do. The time is not far distant when the value of many hardy plants will be fully recognised. But coming to the subject of this short paper, it is no difficult matter to say that the American Cowslips are among the handsomest of hardy flowers. They belong to the Primulaceae, and in growing them it is most beneficial to associate



them with such plants as Primulas, Soldanellas, and Cyclamens. Where any one of these genera will flourish they are equally happy. If a bed is set apart after due preparation to Primulas you may depend upon the Dodecatheons flourishing as well. It is necessary that the position selected should be a moist and shady one. We have seen Primulas planted in sunny positions, and unless constant and copious supplies of water are given them during a dry season they are literally baked. They succeed remarkably well on the rockery, planting them in shady places, readily establishing themselves, and flowering very freely. Some of our growers recommend for their successful culture light peaty soil. With that treatment, however, we do not agree, knowing well that although they thrive in light peat soil, at the same time the result of experience is greatly in favour of employing light loamy soil, leaf soil, and sharp sand, which is also an excellent soil for most of the Primulas. Planted on the rockery in a small portion of that soil they will succeed well and the result will be satisfactory.

The typical forms of Dodecatheon are all natives of North America; some of the varietal forms of *D. Meadia* may have originated in our gardens, or have been introduced as natural varieties, since, like almost all the genera of Primulaceæ, they are easily worked upon either by artificial or insect agency. They are all perennials, easily increased by division of the rootstock or from seed, although the seed if sown in spring is frequently slow in germinating—in fact we have had it germinate after being in the pots a twelvemonth. The seed should be sown as soon as ripe, but if purchased from a seedsman it is as well not to discard it until all probability of its germination is past. They produce erect racemose spikes of pendulous Cyclamen-like flowers during the early summer months, with the segments of the corolla sharply reflexed. The generic name assigned to these plants by Linnaeus is very absurd, as it literally means "twelve divinities," and like a multitude of other names the similarity or associations of the subjects in question with those represented only rests in a very remote region of the imagination. Below are enumerated the species and varieties with which we are acquainted.

*Dodecatheon integrifolium*.—Widely distributed over North America, varying to some extent; it grows from 9 to 12 inches high, producing numerous spikes of bright crimson flowers which last a considerable time in beauty. This is as handsome and durable as any of them.

*D. Jeffreyanum*.—This is a more recent introduction than the last; it varies in height from 1 to 2 feet, usually growing about 18 inches high, producing strong scapes of bright rosy purple flowers, which are also rather larger than those of the last.

*D. Meadia*.—This is the most common of the series, and is frequently known as the "Shooting Star of the West." It is very widely distributed throughout North America, and there is a large amount of variation, which has originated the establishment of many varietal forms. The typical form produces scapes about a foot high, bearing several flowers of a lilac or rosy red colour. It is a very valuable species, and will thrive well in ordinary borders if a select position is given to it and a little attention. For growing in pots it is valuable, and the cultivator is well rewarded. Other varieties of this species worth growing are album, which is similar in all respects to the type, but has white flowers. *Elegans* is a charming variety; the flower scapes are freely produced, bearing several large bright rosy lilac flowers. This is also a vigorous grower. *Carneum*, with very delicate blush flowers, produced in very large umbels. *Giganteum*, a tall-growing variety 18 inches high: the umbels large, bearing dark rose-coloured flowers.—T.

#### DIGGING AMONGST FRUIT TREES.

FOR several seasons I have never forked or dug the ground near the Raspberries, only spreading the dung on the surface, and the crops have invariably been excellent. Had I depended on the trees to which manure is turned in annually for our supply of Apples and Pears this season I should have been quite without fruit, but on the trees which have not been disturbed for years the crops were abundant. This is not a chance result, for I have observed the same fact during previous years.

I should be pleased to hear if any of your readers have observed the same result. My opinion is that annual digging amongst fruit trees destroys the surface roots and causes the lower roots to take a deeper hold of the soil until they penetrate into an unfavourable subsoil, then follows unfruitfulness.

It may have been observed that trees with their roots deep in the soil are very often as green in the foliage as any other, but although the blossoms are abundant only a few set fruits are produced, and these either fall off while young or become cracked and woody when old. This is the result of my experience, and the very opposite is the case with trees which have not been disturbed for years. I have lifted and replanted nearly every fruit tree and bush in our kitchen garden this autumn. The roots of all have been mulched over with dung. This will be done every winter when necessary, but the manure will not be dug in amongst the roots.—A KITCHEN GARDENER.

#### SCHIZOSTYLIS COCCINEA.

THIS useful autumn and winter-flowering plant is of recent introduction, having been first received in this country in 1864 from Kaffraria, a territory of South Africa. With me it is quite hardy, but if unprotected it is so late in flowering that its beauty is in a great measure destroyed by the frosts. To see its beautiful crimson flowers in the best condition they must expand under glass. The plant requires a compost of good sandy loam, peat, and leaf soil in equal quantities and thorough drainage; the pots should be plunged in sand in a cold pit through the summer. Any person who wishes to have a grand display in beds may do so by growing plants on during spring and early summer in pots and plant them out in early autumn, protecting them from frost when necessary.—IRID.

#### CHRYSANTHEMUM AND FRUIT SHOWS.

##### KINGSTON-ON-THAMES.

MORE than usual interest attached to this Show, in consequence of the competition for the twenty-five guinea challenge cup provided by the President and Vice-Presidents of the Society, under the following conditions, for twenty-four incurved and the same number of Japanese blooms—"The winner to hold the vase till the next Exhibition, when it shall be returned to the Society. Should the same exhibitor win the vase twice (not necessarily consecutively), it shall become his property, but should it be won by three different exhibitors in the first three years, then the competition in the fourth year shall be confined to the three winners." All subscribers of one guinea are allowed to compete, and in the first contest Mr. Harding, gardener to T. D. Galpin, Esq., Bristol House, Putney Heath, was the winner; Mr. Moorman, gardener to Miss Christy, Coombe Bank, Kingston-on-Thames, being second; and Mr. McPherson, gardener to S. Page, Esq., St. Leonard's Lodge, Surbiton, third. Mr. Harding was very strong in the incurved section, but rather weak in Japanese; Mr. Moorman staging the best stand of Japanese blooms in the Show, but his incurved flowers were more than a week past their best. Mr. McPherson's blooms were more regular, but in neither section strong enough to attain a higher position. The class was a difficult one to judge, but the verdict was undoubtedly correct, there being about half a dozen points between each collection. Mr. Harding's Japanese stand contained Fulgore, very pale; Fair Maid of Guernsey, Criterion, Elaine, and Sultan, all fine; Peter the Great, Jane Salter, and Chang (good), The Daimio, Plantagenet, James Salter, Red Dragon (good), Comtesse de Beauregarde (fine), Sarnia, Nuit d'Hiver, Ethel, Diamond, Tendresse, and Gloire de Toulouse, all small; Hero of Magdala, Hiver Fleur (chaste), Fulton, brilliant yellow; Magnum Bonum, and Dr. Masters (small). The incurved varieties were Queen of England, John Salter (fine), Hero of Stoke Newington (chaste), Mr. Corbay, Alfred Salter, Jardin des Plantes, Empress of India, Lady Harding, White Venus, Princess of Wales, and Mrs. G. Rundle, all good; Guernsey Nugget, Nil Desperandum, White Globe, Pink Venus, all rather small but well finished, the front row consisting of Sport, Beethoven, Pink Perfection, Mrs. Dixon (good), Lord Stanley, G. Glenny (good), Lady Slade, and White Beverley.

In the class for twenty-four blooms of distinct incurved varieties there were six exhibitors, the display being very good. Mr. Tunnington, gardener to C. McIver, Esq., Calderstones, Liverpool, obtained the premier award with an excellent collection of well-formed even blooms, including a selection of the best varieties in cultivation. The following were especially noticeable for their freshness and symmetry:—Sir Stafford Carey, Mrs. G. Rundle, Mrs. Dixon, Princess Beatrice, Golden Empress of India, Barbara, Eve, and Hero of Stoke Newington. Mr. J. Clarke, The Gardens, Roehampton Lodge, secured the next position of honour with blooms but slightly inferior to Mr. Tunnington's in freshness and form; Golden Empress of India, Mr. Corbay, Prince of Wales, and Venus being extremely well represented. Mr. Harding, who was placed third in this class, staged a good collection but containing several weak points. Mr. E. Berry exhibited the best collection of twelve incurved blooms, his varieties being well chosen, the flowers distinguished by their substance and neatness in outline;

Bronze Jardin des Plantes, Alfred Salter, and Nil Desperandum were superb. A. Duncan, Esq., Chislehurst, followed with smaller and not quite such even blooms, and Mr. J. Masters received the third prize for a collection very close in point of merit to the last mentioned. The four other exhibitors in this class staged fair blooms generally, but each collection contained sufficient weak blooms to prevent them from obtaining honorary positions. Mr. J. Beard, gardener to J. Shand, Esq., Fullbrook, Old Malden; Mr. J. Lyne, Wimbledon; and Mr. W. Clark, gardener to A. Nagle, Esq., Kingston, secured the chief prizes in the class for six incurved blooms.

The display of Japanese varieties in the three classes devoted to them was highly attractive, the distinct and bright colours and singular forms of these varieties considerably relieving the monotonous symmetry in the incurved varieties. Mr. Tunnington was awarded the chief prize in the class for twenty-four blooms of distinct varieties. The blooms were rather small but remarkable for freshness and brightness of colour, and as one of the Judges remarked, Mr. Tunnington would have proved a formidable antagonist had he entered for the challenge cup. Some of the finest blooms in this collection were The Cossack, Tokio, Wizard, Nuit d'Hiver, The Daimio, Golden Dragon, Leopard, Mr. Charles Hubert, and the neat little white Lacinium. Mr. Richards, Surbiton Hill, was a good second, but his varieties were not so distinct nor the blooms so fresh as in Mr. Tunnington's collection. Mr. W. Rowman, gardener to J. J. Wilks, Esq., Otlands Park, obtained the third prize with fair blooms but somewhat deficient in substance, although the selection of varieties was commendable. Messrs. Hinnell, King, and Lyne carried off the prizes for twelve Japanese blooms, all showing examples of the most popular varieties very close in merit. The collections of six Japanese blooms were not distinguished by any special degree of excellence generally, although Messrs. Beard and Masters exhibited several good flowers.

In the one class devoted to reflexed varieties the exhibits were not in first-rate condition generally, although Christine, Beauté du Nord, and Garibaldi were well shown by Mr. J. Rowman, who obtained the first prize. Messrs. Hinnell and Richards were awarded the remaining prizes for blooms of only medium quality. Mr. Moorman staged the best collection of twelve blooms, Anemone varieties, Gluck and Queen Margaret being very neat in form. Messrs. Rowman and Berry followed with blooms of average merit. For twelve bunches of Pompon varieties Mr. J. Lyne obtained the premier award with fair specimens, the other exhibits in that class being rather poor.

**Plants.**—In a structure so large as the Drill Hall, in which the Exhibition was held, plants in considerable numbers are essential for furnishing the building and rendering it attractive. Some admirable miscellaneous groups, each occupying space not exceeding 100 square feet, were arranged in a semicircular manner at the end of the hall. The prizes in these groups went in the following order:—First, Mr. Beard, gardener to J. Shand, Esq., Fullbrook, Old Malden; second, Mr. Attrill, gardener to C. J. Freake, Esq., Park Grove, Kingston; and third to Mr. Hinnell, gardener to F. A. Davis, Esq., the President of the Society. Both in the quality of the plants and their arrangement the collections were excellent, Mr. Beard's group finding favour presumably as containing more flowering plants than the others, notably a free sprinkling of Poinsettias.

Four prizes were offered for collections of Chrysanthemums in pots, space not exceeding 50 feet. The competition was extremely close. The premier award fell to Mr. Moorman for a close and gay arrangement, the blooms being fine, the varieties numerous, and colours well mixed. The plants were grown in a natural manner on single stems, and many of them appeared unusually dwarf for this form of culture. Mr. Luff, gardener to W. Subnadiere, Esq., Delta House, Worcester Park, was an excellent second, the foliage being better than in the premier collection; Mr. Richards, Surbiton Hill, third, with dwarf and standard-trained plants; and Mr. King, gardener to R. Few, Esq., Wolsey Grange, Esher, fourth with vigorously grown plants bearing fine blooms.

In the class for six dwarf-trained specimens Mr. King was far in advance of other competitors, three of the plants being upwards of 6 feet in diameter, and not 3 feet high in the centre. These three specimens probably contained five hundred blooms. Mr. Richards; Mr. Child, gardener to J. Gray, Esq., Claygate, Surrey; and Mr. Beard had the remaining prizes in the class. For standards Mr. Plowman and Mr. Beard had the chief prizes, and the first-named exhibitor brought a pair of concentrics—that is, standards with grafted beehive-like heads, the rings of colour being yellow, white, yellow, pink, and a terminal apex of white. Mr. Lyne, The Gardens, Belvidere House, Wimbledon, was the principal exhibitor of Pompons.

Table plants and Ferns for the dinner-table were arranged down the centres of the tables devoted to the cut blooms of Chrysanthemums, and afforded agreeable relief to the formal masses of colours. For table plants the prizes went to Mr. J. Lyne, Mr. King, Mr. Richards, and Mr. Beard, all of whom exhibited neat specimens of Dracenas, Crotons, and Palms. The Ferns were

generally rather too dwarf and bushy for the purpose of table decoration, but otherwise good. Messrs. Hill, Beard, and Buckland were awarded the prizes in the order named. Primulas were also fairly well exhibited by Mr. Clarke, gardener to A. Nagle, Esq., Kingston; Mr. Watson, gardener to Captain Cundy, Norbury House, Surbiton; and Mr. Attrill, who were awarded the prizes in the order named.

Of fruit there was a moderately good display. Mr. Richardson secured the premier prize for six dishes with very large bunches of black and white Grapes, two dishes of Apples, and two of Pears; Mr. Luff following with a very neat collection, the Grapes being smaller; and Mr. Beard. Mr. King won the first position for four dishes of Apples, two dessert and two culinary, with Cox's Orange Pippin, King of the Pippins, Blenheim Pippin, and Beauty of Kent, fine; and for four dishes of Pears Mr. Attrill was first with Beurré Diel, Hacon's Incomparable, Brown Beurré, and Duchesse d'Angoulême. Messrs. T. Jackson & Son, Kingston, exhibited Vines in pots bearing fruit, also excellent Black Alicante Grapes, good table plants, Ferns, &c., which contributed an agreeable feature to the Show.

Altogether the Exhibition was a very good one, and was well managed under the able direction of Mr. Jackson, jun., the efficient Secretary. It was held on the 27th and 28th ult., having been postponed from the 20th, but in the opinion of many exhibitors the Show would have been better if it had been held on the original date, when both plants and blooms had not lost their freshness.

#### BIRMINGHAM.

The nineteenth annual Exhibition of the Birmingham and Midland Counties Chrysanthemum, Fruit, and Flower Society was held on the 26th and 27th ult. in the Town Hall, Birmingham. In accordance with the usual excellent custom the Mayor granted the free use of the noble Hall for the purpose, and it was filled to repletion with the various exhibits. The display of dwarf and bush-trained large-flowering, and Pompon Chrysanthemums was unquestionably the finest of the year. No standard plants were shown such as those exhibited so well at the Westminster Aquarium and Walton, and the cut blooms were by no means equal in numbers or quality to those that have been staged in London and its vicinity, yet a few of the stands were very good. Primulas were a prominent feature of the Show, no less than thirteen classes being provided for them, all of which were well filled, while in some the competition was great. Many of the plants were remarkably fine, far exceeding those usually seen at metropolitan exhibitions. Fruit was admirably exhibited, Grapes, Apples, and Pears being both numerous and excellent; and bouquets were above the common order of merit. Indeed Birmingham may justly be credited with producing one of the very best exhibitions of the present autumn.

In addition to the first prize in the class for nine plants of Chrysanthemums, a silver cup was provided as the premier prize of the Show. This was nobly won by Mr. Dyer, gardener to T. W. Webley, Esq. All the specimens in this collection were good, three of them being truly grand; they were the beautiful trio Mrs. G. Rundle, Mr. George Glenny, and Mrs. Dixon. These fine examples of culture were from 6 to 7 feet in diameter, somewhat in the form of inverted saucers, and about 3 feet high in the centre; they were not so thinly tied out as many large plants are, nor were the blooms small; on the contrary, the flowers were good, and there were six hundred of them on the three plants. The other varieties in the group were Prince of Wales, Baron Benet, Chevalier Damage, Lord Derby, John Salter, and Lady Hardinge—a splendid group. The second prize went to Mr. Denning, gardener to J. Jaffray, Esq., for much smaller yet neat although overtied specimens, all the plants being of the same size and as regular as if cast in a mould. The plants in the third-prize group of Mr. Padbury, gardener to R. P. Yates, Esq., were trained in a more natural and upright manner, good in foliage, and some of them carrying blooms of great merit; but for one or two failing plants in the back row this collection would have had the second position, and was left very reluctantly by the Judges. In the minor classes the plants generally were very good, notably the single specimens of Mr. Dyer, and the three plants of Mr. Stacey, gardener to F. Ostler, Esq., which obtained the premier prize in their class.

Pompons, although affording signs of having been advanced in heat, were much the finest we have seen this year. Mr. Dyer exhibited massive but rather overtied plants upwards of 5 feet in diameter, and Mr. Stacey grand round naturally trained bushes, good in foliage and flowers, and obtained the chief prizes in the principal classes. Mr. Doughty, Mr. Jinks, and other exhibitors also staged well and successfully. The best cut blooms were exhibited by Mr. J. W. Silver; they were not large, but fresh and well finished. Messrs. Warrender, Shingler, and Hampton also had very creditable stands.

Primulas were remarkable for their numbers and excellence, the size of the plants and quality of the flowers being such as are seldom seen. Hundreds of grand plants were staged, forming an exhibition, and an attractive and meritorious one, in themselves. The principal exhibitors were Mr. Caldicott and Mr. Tompkins, who secured many prizes. Messrs. Pache, Pope & Son, Jinks, and

Denning were also successful in several classes. Mr. Stacey exhibited admirably grown Solanums, as also did Messrs. Pope & Son a compact and fine-berried variety named *Empress*.

Table plants were staged in excellent condition by Messrs. Stacey, Herne, and Jinks, who secured the prizes in the order named. *Mignonette* was well shown by Messrs. Denning and Hooper, *Poinsettias* by Mr. Blake, *Cyclamens* by Messrs. Pope and Son, and *Eucharises* by Mr. Palmer; very fine specimen stove and greenhouse plants by Messrs. Jinks, Jones, and Dyer, who were placed in the order named; and Mr. Vertegans exhibited excellent *Poinsettias*, remarkably dwarf and fine American *Tuberoses*, *Calanthes*, and *Ferns*. The prize bouquets of Messrs. Fulton and Sons and Pope & Son in the nurserymen's class, and Messrs. Jones, Scarf, and Jinks in the amateurs', were exceptionally good, the prizes being awarded in the order of their names.

Fruit was a prominent feature of the Show. For a collection of six dishes Mr. Bannister, gardener to H. St. Vincent Ames, Esq., Westbury-on-Trym, Bristol, was placed first with superior *Lady Downe's* and *Muscat Grapes*, an excellent *Melon*, with fine *Pears*, good *Apples*, and a dish of *Peaches*. Mr. J. W. Silver and Mr. Willis securing the remaining prizes. For four dishes Mr. Denning was first with black and white *Grapes*, *Pears*, and *Apples*, all good. The class for three bunches of black *Grapes* brought out ten competitors. Mr. Dyer won the premier position with Black *Alicante*, the bunches about 2 lbs. in weight, being of good shape, full, regular, and well finished. The other prizetakers were Mr. Stacey, Mr. Willis, Mr. Rawbone, and Mr. Hooper, gardener to Sir Josiah Mason, who all staged admirable produce. White *Grapes* were not so good, the prizes going to Messrs. Bannister, Crawford, and Sayer. *Pines* call for no comment, but *Apples* and *Pears* were excellent. In these classes Mr. Gardiner, gardener to E. P. Shirley, Esq., Ettington Park, Stratford-on-Avon, a well-known excellent cultivator, contributed admirably and successfully. His first-prize collection of twelve dishes, six dessert and six culinary, comprised fine dishes of Warner's King, very large; Northern Greening, Yorkshire Greening, Golden Noble, Round Winter Nonesuch, New Hawthornden, Wyken Pippin, Ribston Pippin, Adams' Pearmain, Fearn's Pippin, Kissington Pearmain, and Mannington's Pearmain. Mr. Bannister was second in this class. For six dishes Mr. Elcock was first with fine fruit, *Dumelow's Seedling* being quite red; Mr. Gardiner second, and Mr. Willis third. For twelve dishes of *Pears* Mr. Bannister was first with a collection of great merit, including *Marie Louise*, *Maréchal de Cour*, *Beurré Clairgeau*, *Hacon's Incomparable*, fine; *Gansel's Bergamot*, excellent; *Knight's Monarch*, *Beurré Sterckmans*, *Easter Beurré*, *Duchesse d'Angoulême*, and *Seckle*. Mr. Gardiner was second with fine fruit, and Mr. Willis third. For six dishes Mr. Gardiner was in the foremost place with fine fruit of *Easter Beurré*, *Beurré Diel*, *Louise Bonne de Jersey*, *Doyenné du Comice*, *Madame Treve*, and *Beurré Superfin*. Mr. Elcock was first for a single dish of kitchen *Apples* with grand examples of *Dumelow's Seedling*, first for dessert *Apples* with *Radstock Beauty*, and first for *Pears* with *Pitaston Duchess*—beautiful fruit, which must either have been grown under glass or in a remarkably fine climate outdoors. *Cucumbers* were good from Mr. Crawford, and *Mushrooms* from Mr. Willis.

Considering that the prizes throughout the schedule were not by any means high much credit is due to the exhibitors for producing so fine a Show, and to the Secretary, Mr. Redfern, Messrs. Latham, Spinks, and others, for managing it so well; yet the system of judging and affixing the prize cards is not the best, and did not enable us to obtain the names of all the prizetakers and the addresses of but few of them.

#### CHELMSFORD.

The autumn Exhibition of the Chelmsford and Essex Horticultural Society was held on the 26th ult. Amongst nurserymen Messrs. Saltmarsh & Son were the only representatives in the first seven classes, while amongst amateurs some of the classes were only contested by one exhibitor, many others by only two, and very few indeed by more than three. To Mr. Joseph Tunbridge, gardener to Mr. W. Bott, The Priors, Broomfield, the merit is due of staging the best plants in the Show; his Mrs. G. Rundle, *Jardin des Plantes*, *Lady Slade*, and others amongst large-flowering varieties measured quite 4 feet in diameter, beautifully trained, and well flowered; while his *Pompons* were scarcely less, and were also beautifully finished. Mr. John Burrell, gardener to W. Duffield, Esq., Broomfield, also staged good plants, well grown and trained, and came in for a good share of the prizes. Mr. W. Smale, gardener to Robert Woodhouse, Esq., Writtle, was, we believe, the only exhibitor who adhered to the single stem style of growing, the result being that his plants were neither so large nor so bushy, but his flowers were the finest exhibited. Mr. E. Warner, gardener to P. Marriage, Esq., Broomfield; and Mr. J. Lay, gardener to F. Christy, Esq., Broomfield Road, were also amongst the prizetakers. The plants of Messrs. Saltmarsh were not large, but very well grown. Mr. F. Kemp, gardener to C. H. Gray, Esq., Chelmsford, and Mr. W. Smale had capital collections of miscellaneous cut flowers, the prizes going in the order named. The best cut blooms exhibited were *Favourite*, *Bronze Jardin des Plantes*, *Hercules*,

*George Glenny*, *Novelty*, *White Globe*, *Pink Perfection*, *Prince of Wales*, *Queen of England*, *Mrs. Haliburton*, *Venus*, *Lady Harding*, and *Ossian*; while *Pompons* were *Golden Cedo Nulli*, *Pink Cedo Nulli*, *Cedo Nulli*, *Bob*, *Dragon*, *White Perfection*, and *Mauve Queen*. Black *Grapes* were fairly represented by Mr. S. Augur, gardener to W. W. Perry, Esq., Springfield, with three bunches of *Alicante*; and Mr. Davis, gardener to F. Chancellor, Esq., with Black *Hamburgh*. Mr. E. Hammond, Broomfield; Mr. C. Pilley, Broomfield; Mr. C. Carville, gardener to the Lord Bishop of St. Albans; Mr. H. White, Bell Cottage, Chelmsford; Mr. J. Fulcher, gardener to J. G. Conder, Esq., Chelmsford; Mr. A. J. Clark, gardener to the Hon. A. Petre; and Mr. J. Clark, Writtle, were prominent amongst the prizetakers in fruits; and excellent baskets of vegetables were exhibited by Messrs. J. Burrell, F. Kemp, E. Hammond, and Josh. Tunbridge. A fine collection of about fifty varieties of *Potatoes* were staged by Mr. T. H. Hill, gardener to A. W. Ruggles Brise, Esq., Witham, and was deservedly awarded an extra prize. The same award was also made to Mr. J. Clark for a superior collection of *Apples* and *Pears*, about forty varieties. The Committee were present to carry out the arrangements, assisted by Mr. P. Edwards, the hardworking Secretary.

#### NOTES AND GLEANINGS.

WE are pleased to learn that the Committee of the GARDENERS' ROYAL BENEVOLENT INSTITUTION have caused to be purchased in the names of the Trustees the sum of £300 3 per cent. consols, thus making the total amount now standing in their names £12,000, from which an annual income will be derived of £360.

THE annual meeting of the NATIONAL ROSE SOCIETY will be held by permission in the rooms of the Horticultural Club, Arundel Street, Strand, on Thursday next, December 11th, at 9 P.M. The annual dinner will take place the same evening at 6.30.

WE are informed that the peculiar sweet fleshy flowers of *BASSIA LATIFOLIA*, which are eaten by the natives of some parts of India, are now being imported into this country by Messrs. Christy & Co., Fenchurch Street, London, as food for poultry, pigs, &c. This tree is a member of the tropical order *Sapotaceæ*, and is called by the natives of India *Mahwah* or *Mahva*. The corollas when mature become fleshy, and contain a large proportion of sugar; they have a slightly bitter, but by no means disagreeable flavour, and doubtless contain a large amount of fat-forming constituents. In some parts of India a powerfully intoxicating spirit is obtained from these flowers, of which it is said as much as an English pint can be purchased for the equivalent of a halfpenny.

ONE of the most effective displays of *CHRYSANTHEMUMS* that has ever come under our notice is arranged in a large Peach house in the gardens of Mrs. Torr, Garbrand Hall, Ewell. The house is a lofty span-roof about 100 feet in length, with a path down the centre. On both sides of the path Mr. Child has improvised espalier-like fences of stakes and string to which the plants are secured, forming hedges of bloom about 6 feet high. At intervals arches are carried overhead across the path, and covered with white, buff, pink, and yellow *Chrysanthemums*, the whole arrangement forming a magnificent promenade. The plants are on single stems and are admirably grown, many blooms being very fine, and yet are in great profusion. Also the entire length of the house is a close row of Mrs. G. Rundle, the plants being dwarf and densely covered with flowers producing a charming effect. About 350 plants are employed in the arrangement, and anything more beautiful than the effect produced is not easy to imagine.

A SIMILAR arrangement is carried out in the conservatory at EWELL CASTLE, which Mr. Scutt invariably has so gay, orderly, and enjoyable. In one of the houses in the kitchen garden—one of a block of very useful plant structures erected by Messrs. Weeks & Co.—is a charming display of *Calanthes*, the spikes of *C. vestita lutea* being especially numerous and fine. They are displayed, too, to great advantage by being associated with small plants of *Dracenas*, *Poinsettias*, *Ferns*, &c., and the structure is extremely attractive. The plants generally in this garden are in admirable condition, being especially healthy and clean, scarcely a decayed leaf being visible, nor an insect to be seen throughout the establishment.

THE appearance again of the flower spikes of the beautiful *SCHIZOSTYLIS COCCINEA* remind us of their value as well as extreme beauty at this season of the year. If it is grown in a rather sheltered border of rich soil, planted in good-

sized clumps through the summer, taken up and potted in 48-pots before the frost affects it, and placed in a frame or greenhouse, the bright scarlet flowers which are copiously produced will not only be found ornamental but very useful.

— MR. WARREN of Hursbourne Park Gardens, desires us to state that he did not purchase his "seed" of CARTER'S MAGNUM BONUM POTATO, which he referred to disapprovingly on page 312, from Messrs. Carter & Co.; but "obtained it from a respectable seedsman, with whom he has dealt largely for some years, and has never had any reason to doubt his strict fidelity in all business transactions." Mr. Warren desires that this statement be made, in order "that readers of the Journal may not be prejudicially influenced in their purchases of Magnum Bonum." In reference to this question Messrs. Carter state that they have searched the orders of the seedsman referred to in their books without tracing any purchase of Magnum Bonums from them, and they further assert that their selected stock is from the original, purchased by them in 1877 from the raiser.

— THERE are several species and varieties of COLCHICUMS now grown in our gardens, but none perhaps are so beautiful as the charming *C. speciosum*, which comes to us from the Caucasus. The flowers are similar in colour to those of *C. byzantium*, rich rose, but very much larger, while the foliage is also ornamental. Any of the forms are well worthy the attention of the hardy bulb grower.

— A CORRESPONDENT informs us that the recently introduced PRIMULA CASHMIRIANA, which is only a variety of *P. denticulata*, has flowered well this autumn, several flowers having yet to expand. The umbels are of a good size and very handsome. *P. rosea*, also a recent introduction, grows very freely in the neighbourhood of London, and is sure to become a general favourite on account of the richly coloured flowers.

— IN Dr. King's report of the ROYAL BOTANICAL GARDENS, CALCUTTA, for 1878-79 are some interesting remarks on the cultivation of the Bamboo as a paper-yielding material. It appears that Mr. Routledge's original scheme of annually cutting down all the shoots on each clump does not prove successful, and that the only feasible plan is the removal of a few shoots each year. It is stated that *Ipecacuanha*, *Rhea*, the *Baobab*, and the *Pará rubber* (*Hevea brasiliensis*) do not thrive in the Calcutta district, and the cultivation of the latter is to be discontinued. The *Ceará rubber* (*Manihot Glaziovii*) is, however, likely to prove a valuable crop.

— MR. C. CORDERY, late of Canford Manor, succeeds Mr. Nicol as gardener to Sir John Kelk, Tedsworth, Marlborough. Mr. MARKS, late gardener to H.R.H. Prince Christian, Cumberland Lodge, has been appointed gardener to E. E. Kay, Esq., Q.C., Thorpe Abbott, Scole. Mr. W. SMITH, late of Barnfield, Southampton, succeeds Mr. Scott as gardener to the Bishop of Winchester, Farnham Castle; and Mr. D. SNELLING, Longton Hall, succeeds Mr. Stalker as gardener to the Earl of Lucan, Laleham, Chertsey.

— "THE COLONIES AND INDIA" of the 22nd ult. contained a useful supplement—viz., a list of works treating on tropical products and economic botany. It is the joint work of Mr. G. J. Symons, F.R.S., and Mr. P. L. Simmonds, and gives the names, authors, and dates of a very large number of authoritative works. It will no doubt prove of considerable utility to botanists and gentlemen engaged in tropical agriculture.

#### MR. WILLIAM PAUL'S ROSE ANNUAL FOR 1879-80.

THIS Annual contains four handsome coloured plates which appear to me to be excellent specimens of the chromo-lithographic art. I take in several gardening periodicals, but I do not remember to have been so pleased with any plates as these. The artist's name is not given, but the lithographer is F. De Tollensere.

The best plate according to my judgment is that of the very dark novelty Jules Chrétien. This is simply wonderful. The foliage is intensely dark, almost the colour of a *Camellia*, but with a sheen of silver and a fluffy carpet as it were super-added. The flower reminds me of a very fine specimen of *Xavier Olibo*, but with a better centre than we usually see in that Rose, unless we pay a visit to Heavtree, to that salutary mount where even thin Roses lose their weakness, and change their consumptive tendencies to the most robust health. The other plates are three offerings of Mr. William Paul to the Rose gardens of England. The first in the book is a noble salmon-tinted pink

Rose called *Pride of Waltham*. If the artist has not flattered this Rose we have here a grand globular light-coloured Rose which combines the attraction of *Mdlle. Eugénie Verdier* with somewhat of the form of *Clemence Raoux*. The next is *Masterpiece*, and a masterpiece it is both of Rose form and of the artist's skill. We have here almost perfection of form, each petal being so beautifully made as to remind me of a *Camellia*. It is a seedling from *Beauty of Waltham*, but the colour may not be so bright as we are accustomed to see in the parent, but there is a shading or glow of silver which lines the edge of the petals which is very charming. The third Rose honoured with a plate is a new miniature Moss variety called *Little Gem*, or *Crimson Moss de Meaux*. It is more mossy than the old *Rose de Meaux*, but in other respects is much the same.

With regard to the literature Mr. Paul gives us a very interesting summary of the weather of this extraordinary season, with a short *résumé* of the Rose shows of the year; also he has a fling at myself and other writers who have ventured to express their opinions on the synonyms in the nomenclature of Roses. But whilst naming the varieties which have been pronounced to be identical he contents himself merely with some general remarks as to the ease with which he himself has attached a correct name to each if fair specimens were brought to him. I must say that when reading this article I was in hopes that so great an authority as Mr. W. Paul would have gone gravely and at some length into the matter; that he would have told us how *Ferdinand de Lesseps* differed from *Exposition de Brie*, and how *Maurice Bernardin* might always be distinguished from both his stable companions. Perhaps Mr. Paul in a future edition will enter into this question and furnish us with some reliable facts on which to act. There is no doubt that a nurseryman who grows Roses by hundreds of thousands has far better opportunities of doing this than an amateur who buries a few hundreds in his churchyard. Mr. Paul's opinion is of course more valuable than any mere amateur's word; still, till he does what I have suggested I must venture to maintain my own opinion that the three Roses referred to are identical.

It is exceedingly gratifying to observe how well the English nurserymen are maintaining their ground as compared with their French brethren in the matter of introducing novelties. Here we have the two—may I venture to call them "apostolic firms"—sending out from four to five grand novelties each year. From *Royal Windsor*, or rather *Slough*, also come two or three fine additions to our rosaries; and now from the stony soil of *Wilt*, from the farm of *Stapleford*, we are told that nine novelties are ready to be sent out to all who will pay half a guinea each for them, while as a grand Christmas box it is whispered that a yellow *Perpetual* is to be had; so that in Rose-growing as well as in all other horticultural art old England is holding her own.—WYLD SAVAGE.

#### OUTDOOR PEACHES IN THE NORTH OF ENGLAND.

YOUR correspondent "ESSEX" will be interested to know that here, 240 miles north of London, Peaches on open walls have only twice failed to ripen during the last twenty years. Last year upwards of twelve dozen were gathered from one tree alone, and nearly all the others carried a fair average crop. The fruit produced by these trees is of superior size and quality. This year the trees on a south wall in the kitchen garden have been seriously injured by the long-continued east winds which prevailed in the spring; while two trees on another south wall, which is well sheltered on the east side by the house, have not only escaped injury but have each produced a good crop, which, however, has failed to ripen. The only protection the trees receive is a double herring net from the time the blossom begins to open till the fruit is set.—T. RICHARDSON, *The Gardens, Brettanby Manor, Darlington*.

#### FRUIT TREES IN PERFORATED POTS.

HAVING been requested to furnish further particulars of this mode of growing fruit trees as described on page 380, we reply by submitting the annexed representation of a tree as grown in Mr. Rivers' nurseries at Sawbridgeworth. The engraving is from a photograph, and shows clearly the great amount of support the trees receive when the pots are plunged in good soil. The roots which issue from the sides of the pots are cut off annually when the leaves of the trees commence changing in the autumn, and the pots are replunged in the border, to which



fresh soil and manure have been applied. Than the Peach | trees grown on this system at Sawbridgeworth none could be



Fig. 44.—PEACH TREE IN PERFORATED POT.

more thoroughly satisfactory. They had produced large crops | it for next year's crop. The plan is applicable to Pears, Plums,  
of superior fruit, and had produced fruitful wood and matured | and Cherries, which can, if desired, be plunged in the open



air during the summer; and good crops of Grapes could no doubt be produced by the same mode of culture.

### THE HAILSTORM RELIEF FUND, 1879.

#### REPORT OF THE COMMITTEE.

THE aggregate amount of damage to glass and crops by the disastrous hailstorm which broke over the districts of Richmond, Twickenham, Ealing, Kingston, Surbiton, Teddington, Brentford, Isleworth, Kew, Hanwell, &c., early on the morning of Sunday, August 3rd, 1879, was estimated at £4000; and although the Committee could not hope to raise that sum, they succeeded in obtaining enough to give substantial relief to many in the form of assistance towards replacing their glass.

The applications for relief from the fund were eighty-one in number, and the total of the statements of damages amounted to over £4000. Awards of money were made to sixty-two persons according to the extent of their losses and their needs. The parishes affected by the storm were arranged into four groups. An Investigation Committee was appointed to each in order to assess the damages incurred by applicants, and the work was very carefully and thoroughly done. The awards made were based on the recommendations of the Investigation Committee, who were authorised to ascertain all needful particulars, so that relief should be given only where deemed right and proper to do so.

The total subscriptions amounted to £1013 15s. 7d., and out of this £937 14s. 3d. was distributed in relief. The time necessary to raise the fund the Committee has administered took much longer than was at first anticipated, and it was necessary to employ a somewhat elaborate machinery both for collecting and administering the same; thus time and money were consumed somewhat disproportionately to the aggregate result.

The Committee feel that they are enabled to close their labours with satisfaction to themselves, and in the hope they have satisfied the subscribers to the fund. They have spared no labour nor pains to do the fullest justice to both subscribers and applicants. The Committee notice with pleasure, as in the case of the Hailstorm Relief Fund of 1876, that not a few of the subscribers and most active members of the Committee were themselves sufferers to a considerable extent. Their co-operation is therefore all the more deserving of commendation.

In conclusion the Committee heartily thank the subscribers of all classes who placed in their hands the means whereby they were able to mitigate much of the distress of some of their suffering brethren; the clergy and ministers of all denominations for their valuable and practical sympathy; the Investigation Committees for much self-denying labour, and all who in any way assisted to make the fund answer the purpose it was intended to serve.—HENRY F. LIMPUS, M.A., *Chairman*; W. PENNYFEATHER, *Treasurer*; RICHARD DEAN and EDWARD KING, *Secretaries*.

### WORK FOR THE WEEK.

#### KITCHEN GARDEN.

**Forcing Department.**—The season has been very unfavourable to plants employed for this purpose, and they require more time to start than in a season when the growths are earlier matured. To have Asparagus, Seakale, and Rhubarb fit for use at Christmas and the new year the roots should be placed in their forcing quarters at once. Asparagus should have a bottom heat of 70° to 75°, and an atmospheric temperature of 50° to 55°. The plants should be lifted as carefully as possible, for the less the roots are damaged the stronger will be the growth, as the produce is almost solely dependant for support on the rootlets that proceed from them. Light rich soil should be employed for covering the bed 2 inches thick. About 8 inches of spent tan or sifted leaf soil should be placed over the crowns after the plants have been put in, which will admit of the easy penetration of the heads and blanch them sufficiently. Seakale is easily accommodated in a Mushroom house, planting it in light rich soil. The better the plants are nourished the finer will be the heads produced, and bottom heat will also assist their growth considerably. It may be forced in a frame over a fermenting bed, the linings being frequently renewed so as to maintain a temperature of 55° to 60°. Rhubarb is finest and is produced more rapidly where bottom heat is provided, a fermenting bed with a temperature of 70° to 75° answering the purpose well. The great value of fermenting materials consists in their inducing speedy root-action. Rhubarb and Seakale, however, are readily forced in a Mushroom house. French Beans should be sown every fortnight or three weeks to maintain the succession unbroken. Chicory roots are readily forced, and the growth is blanched in a darkened Mushroom house. The Chicory

should have the tops cut off not nearer than an inch to the crown, and the roots planted in light rich soil. The Mushroom house must be heated and kept at a steady temperature of 60°, it being useless attempting to force Seakale, Rhubarb, and Chicory without heat, and many failures with Mushrooms occur through the uncertain and variable temperature of an unheated structure. If there is likely to be a scarcity of salads young plants that in the ordinary course would not come in until spring may be lifted and planted in light rich soil in the Mushroom house and they will make fresh blanched growth quickly. Dandelion roots may be lifted and treated similarly to Chicory, and when the growth is produced quickly and well blanched it is not despicable. Roots of Mint and Tarragon should be potted, or they may be planted in boxes about 4 inches in depth, 2 feet in length, and 1 foot wide, employing strong roots and light rich soil. They should be kept in a sheltered place and protected in severe weather, removing them into heat as required. Chervil lifted carefully and placed in boxes will be very useful if kept in a house with a moderate temperature. Potato sets should be placed in shallow boxes on the floor of a forcing house, laying them about 3 inches apart on leaf soil 2 inches in depth, and cover them about an inch deep with similar material; when the shoots are about 8 inches high raise the sets carefully, preserving the shoots and all the roots possible, and plant them in beds or pits previously prepared, placing them 15 inches apart, and covering them about 4 inches deep. The soil must be light and rich. Where space is available in Peach or Vine houses sets prepared as above may be placed in pots, one in a pot 9 inches in diameter, or three in a pot 12 inches in diameter, by which means early dishes may be obtained. Carrots and Radishes in the early stages of growth require good ventilation, closing and covering the frames only as may be necessary to secure the safety of the plants. The surface soil between the rows of Radishes, Lettuces, Cauliflowers, Parsley, &c., in frames should be stirred occasionally, and all decayed leaves removed. Slugs must be sought for with a vigilant eye, and an occasional dusting over the plants with dry wood ashes will be serviceable. As Cauliflower and autumn Broccoli form heads about the size of a tea-cup they should be lifted and planted in moist soil in pits or frames; it is a good practice to tie the leaves together. Ventilate the frame freely in favourable weather.

#### FRUIT HOUSES.

**Vines.**—Those who desire to cut fresh ripe Grapes before the end of May must commence forcing in earnest. The outside border should have protection from cold rains and snow, and if possible a covering of litter and leaves, two-thirds of the latter to one of the former, should be applied. Borders that were covered in early autumn with litter or bracken will not require to be covered with fermenting materials now. The house having been previously cleaned, start the Vines with a night temperature of 50°, and 5° more in mild weather, which must not, however, be exceeded until the buds commence swelling. Syringe occasionally in the morning and early afternoon; but if a bed of sweetened stable litter and leaves be formed on the floor of the house or inside border the necessity for syringing will not be great, and the vapour given off by the fermenting material will be conducive to a vigorous and regular break. Prior to starting, the inside border should have a thorough watering with water at about 90°. In midseason houses the Vines will ere this have been pruned, or as the foliage has ripened late it may in some instances yet require to be done. The houses should be kept as cool as possible, frost being excluded. Houses where the Grapes have been partially cut, and which it is desirable to clear out entirely for painting and other repairs, as well as for pruning, the bunches may be cut with a good piece of wood attached and inserted in bottles of water, placing them in any dry room from which frost can be excluded. Late varieties, however, such as Lady Downe's, should not be cut until the new year, and there will then be no difficulty in keeping them in good condition till May.

#### FLOWER GARDEN.

Excepting *Sternbergia lutea*, which appears to defy all weathers, there is little to attract notice in the herbaceous borders. Christmas Roses are also valuable for winter and early spring, the flowers being greatly appreciated. Where handlights are available they should be at once placed over the plants, as the flowers come much larger and are better in colour when protected in this way. There is always great danger in digging herbaceous borders at this season unless the positions of all the plants and bulbs are clearly indicated by stout hard wooden pegs. In the case of bulbs and the commoner plants this is generally considered sufficient, although it adds much to the interest of plants to have them properly named. The borders being cleared of decayed flower stems and withered foliage, a good dressing of manure or leaf soil should be given to enrich the soil and act as a protection against frost. Pyrethrums, Delphiniums, and others subject to the ravages of slugs should have the soil removed from around the crowns, dusting with quicklime, and instead of replacing the soil place ashes about and over the crowns. Rats and mice also often make great havoc amongst bulbs. Ere winter sets in in real earnest plants of doubtful hardiness should have the necessary protection. A few leaves with a handful of bracken form a good protection.

Bambusas, Pampas Grass, New Zealand Flax, Chamsrops Fortunei, and similar plants winter quite safely protected in this way, whilst dwarfier plants may have about 8 inches thickness of ashes placed around and close up to the stems or crowns, and over the latter if the plants are deciduous. Tender shrubs, &c., grown against walls should have the borders mulched with short litter or partially decayed leaves, and in addition a double thickness of mats in front of such plants as Magnolias, Ceanothuses, &c., will be necessary in severe weather. Beds of dwarf Roses should be well covered with stable litter, or fresh leaves and bracken will answer. China and Tea-scented Roses should be covered over the roots similarly, and some bracken or hay threaded amongst the branches. The standards also should have a good mulching of litter over the roots, as when those are well protected the stems are generally safe. Beds or borders of Belladonna Lilies should be protected by strewing some half-decayed leaves over the crowns, as when the clumps become strong the finest bulbs are forced to the surface. They require good drainage, a warm situation, and security against frost, the same remarks applying to Alströmarias. Gladioli corms should be lifted, laid in a shed safe from frost until they are thoroughly dried, and then stored away in a cool dry place, frost of course being excluded. Dahlia roots should be lifted if not already done, and laid root upwards to part with superfluous moisture, and when dried store them away in sand. Cannas, Marvel of Peru, Tuberous Begonias, Salvia patens, &c., may be treated similarly to the Dahlias. Examine the beds of spring-flowering plants, and if any are loosened press the soil firmly about them, and if a mulch be given between the plants as well as over beds of bulbs of short manure, partially decayed leaf soil, or cocoa refuse, it will be beneficial as a protection against frost.

#### PLANT HOUSES.

**Stove.**—All winter-flowering plants, such as Euphorbia jacquiniiflora, Eranthemums, Poinsettias, Centropogons, Thysacanthuses, Centradenias, Gesneras, &c., should be placed near glass. Hard-wooded plants being now for the most part at rest a thorough cleaning should be made as time and opportunity offers. Syringing is the most ready means of applying an insecticide, but not by any means the most effectual, as mealy bug and scale are so protected by their outer coat. A brush, a sponge, and a pointed piece of wood are necessary to destroy mealy bug effectually. All insecticides are more potent if applied warm; hot water (120° to 140°) will destroy as many insects as one-half the preparations sold, which very often owe more to the mode of application than anything else. The temperature in this structure may now fall to its winter minimum—viz., 55° in the morning in severe weather, 60° to 65° by day by artificial means, and 70° to 75° with sun heat. Very little ventilation will be needed, but a little should be afforded in mild weather, not to lower the temperature but to admit of a change of atmosphere. Water only to maintain the foliage in good condition. Deciduous plants should be kept dry, watering only to prevent the wood shrivelling. Caladiums should not be kept dust dry, but have the soil a little moist, the temperature being about 60°. Gloxinias and Achimenes should also have the soil a little moist, or they shrivel and do not start so strongly, and the corms of Gloxinias often decay if they are kept dust dry. Both will winter safely in 10° less than Caladiums require.

**Greenhouse.**—Cuttings should be taken of Chrysanthemums, stout short snuckers of about 8 inches in length, taking them off with about an inch of root stem, and inserting them singly in 8-inch pots; turfy loam with a fourth of leaf soil, well-decayed manure, and a sixth of sand answers. Three cuttings may be inserted in a 4-inch pot; place the pots on ashes in a cold frame, shading from bright sun, protecting from frost, and after the cuttings begin to grow ventilate the frame freely. The single plants will answer for growing in 9-inch, and the trebles for 12-inch pots.

#### TRADE CATALOGUES RECEIVED.

R. Dean, Ealing, London.—*Catalogue of Primulas, Pansies, &c.*  
Dickson & Robinson, 12, Old Millgate, Manchester.—*Catalogue of Forest and Ornamental Trees.*

#### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense. Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**BOOKS (Gibber).**—We do not know of any book of the kind you appear to require. Designs suitable for various positions may be found in back numbers of the Journal.

**BOOK ON OLIVE CULTURE (B. Brothers).**—A work entitled "Tropical

Agriculture," published by Spon & Co., Charing Cross, price 21s., contains the information required.

**BOOKS ON ORCHIDS AND GREENHOUSE PLANTS (A. R. F.).**—Williams' "Orchid Grower's Manual," and "Stove and Greenhouse Plants" would suit you; also Appleby's "Orchid Manual," and the "Greenhouse for the Many." The two latter may be obtained from this office post free for 2s. 7½d. and 10d. respectively.

**ELEMENTARY BOTANICAL WORKS (Rev. J. J. D.).**—For a beginner we should recommend Oliver's "Elementary Botany," Lindley's "School Botany," Smith's "Domestic Botany," and Balfour's "Manual of Botany;" to be followed by Professor Lindley's "Vegetable Kingdom," and Dr. Hogg's "Vegetable Kingdom," both standard works of an advanced character.

**BULBILS ON BEGONIA STEMS (M. D.).**—The occurrence of bulbils on the stems of Begonias is a peculiarity that characterises many species, being most marked in *B. Martiana*, *B. bulbifera*, *B. discolor*, and *B. diversifolia*. These bulbils when placed in suitable soil, &c., quickly grow into plants—indeed that is a very ready way of propagating them.

**ARONIA GRANDIFOLIA (W. C. E.).**—We are not acquainted with "Aronia grandifolia." Probably the tree to which you refer is *Crataegus Aronia*, a native of the Levant, which bears large yellowish fruits.

**MAKING MUSHROOM BED (M. J.).**—A mixture of short stable manure and leaves will answer admirably for the lower half of your Mushroom bed. We have had many fine beds of Mushrooms when the lower portion of 6 or 7 inches consisted of such a mixture surfaced with the same thickness of horse droppings, the whole of the material having been properly prepared, and containing just sufficient moisture to induce steady fermentation. Your other question will be answered next week.

**GAS LIME (W. F. B.).**—It is chiefly valuable as a preventive of insect pests. It should be applied in autumn or some time prior to planting the crops, digging it in; for which purpose 20 bushels per acre is a sufficient quantity. It is suitable for most vegetable crops, and after it has been some time exposed to atmospheric influence is converted into sulphate of lime or gypsum, and is valuable as a dressing to grass land, lawns, &c.

**PRUNING CLEMATIS (De Bosco).**—If the plants are against a wall or trellis merely cut them back to firm ripe wood, thinning out where too crowded. If in beds remove all the spray and leave only sufficient firm wood for furnishing flowering growths in the ensuing season. In the case of young plants cut well back to plump eyes and firm wood at the base of the plants.

**CALANTHE FLOWERS FALLING (W. M. A.).**—It is due to the plants being kept too moist at the roots, the atmosphere being also too moist and the temperature too low. Keep them drier and warmer and they will expand. The house also is too moist and close for Gesneras, and not light enough.

**HOT WATER FROM BOILER (A Subscriber).**—The water from the boiler may be used for mixing with the cold to render it of the temperature required for watering with, but it is not so good as that obtained from a tank or cistern in the house. This is the best time to insert Chrysanthemum cuttings, and the best way to treat them is given in "Work for the Week," which see. Water from a new cement cistern is not injurious to plants.

**MULCHING NEWLY PLANTED ROSES WITH COW MANURE (Amateur, Co. Durham).**—The manure, which we presume contains a large portion of straw, instead of being too cold is the best of all manures for Roses, especially where the soil is light; but if there is very little straw in the manure it would not be advisable to apply it more than an inch or two in thickness as a mulch, which would to some extent exclude frost. The salts would be washed down by the rains and enrich the soil, and would greatly invigorate the plants.

**PREPARING STIFF SOIL FOR ROSES (An Inquirer).**—If you have added manure liberally to the ground in the process of trenching nothing further will be required; if not, a good dressing should be given and well mixed with the soil, and if you could at the same time add some fresh turfy loam it would be an advantage. The burning of "gault" (clay marl) will have improved the soil by making it more open and pervious to air and moisture. The surface soil may be kept from cracking in summer by mulching with short manure.

**PROPAGATING VARIEGATED IVIES (A. H.).**—The best mode of increase is by grafting on stocks of one of the free-growing green-leaved varieties, of which cuttings can be struck in an open border. The cuttings may be inserted in early autumn, and when rooted be potted, and if placed in a close warm frame in early spring and grafted with the choicer varieties good plants of the latter are much sooner obtained than by striking them from cuttings. A good time for layering shrubs is late September. Some Conifers are increased by layers, but the usual plan is to raise them from cuttings inserted in sand and placed in close pits, and by seeds.

**DISSOLVING BONES (W. F. F.).**—The quickest mode with which we are acquainted is by the aid of sulphuric acid. The bones should be broken as small as possible, put into a tub, and be frequently stirred in a mixture of sulphuric acid and water. The proportions are 12 oss. acid, 12 oss. water, and 16 oss. bones. Another, but a slower mode, is as follows:—Take a large watertight hogshead, and cover the bottom with about 6 inches deep of dry soil; on this put a layer of bones of the same depth, and cover them entirely with wood ashes; on these another layer of bones, then ashes, and so on till the hogshead is full. Leave it exposed to the rains all summer and winter till spring; then on removing the contents of the hogshead the bones will crumble to powder under a slight pressure, and form one of the most valuable manures ready for immediate use. For fruit trees requiring aid the manure would be very beneficial.

**AURICULA APHIS (W.).**—This pest is most difficult to eradicate, and we should adopt strong measures promptly. We do not think it would seriously injure the plants to wash their roots with paraffin water at a strength of a fluid ounce of paraffin to a gallon of water, the oil to be mixed with the water as thoroughly as possible. We grow Auriculas, but fortunately they are clean; yet by way of experiment we have watered some of the plants with paraffin water of the strength quoted, and no injury whatever has resulted to them. We regret the pest has been sent to you, but with the aid of Gishurst and paraffin and the perseverance with which you intend applying these and other insecticides that may suggest themselves, we trust the aphid and not you "will have to retire defeated." We shall be glad to have the results of the contest.

**HEATING GREENHOUSE FROM KITCHEN BOILER (Lemon).**—Two rows of 3-inch pipes round the house would afford sufficient heat for maintaining a stove temperature. The boiler must be below the pipes, the flow being inserted at the top and the return pipe at the bottom. The propagating pit

may be formed over the pipes in any part of the house most convenient. If it is not convenient to take the pipes across the doorway two rows of 4-inch pipes, a flow and return, along one end and the front of the house under the stages would suffice. In that case we should have the propagating pit as near the boiler as possible. The flow pipe should have a gradual rise from the boiler to the most distant point, where an air pipe should be fixed, the return pipe having a gradual descent to the boiler. You might consult an intelligent ironmonger or gardener with advantage in a work of this nature. If you send *S&J*, in stamps to the publisher and ask him to send No. 789 of the Journal, you will find an illustrated account of a vinery heated successfully from a boiler in the kitchen the perusal of which might be of some service to you.

**HEATING HOUSES (Horatio).**—Hot-water piping will be necessary for heating the houses efficiently. We do not approve of the plan you suggest, as we have seen a similar system tried, and it proved a complete failure. Heated air always ascends, and by the mode referred to the house would be much too hot at the back and too cold in front. Either a saddle or tubular boiler will heat the houses satisfactorily. When boilers are set in brickwork there is a conservation of heat, but we know of portable boilers which give great satisfaction to those who employ them. Select the boiler which appears best adapted to the position. The system of glazing you mention will answer for the hothouse.

**FAILURE OF ASPARAGUS (A Lady).**—The low temperature and excessive wet of last summer is the cause of the newly-planted Asparagus decaying. Healthy plants planted in the same soil will doubtless succeed if next summer prove favourable.

**CHRISTMAS ROSE (Idem).**—The Christmas Rose is *Helleborus niger*. It is a native of Austria, introduced to this country some three hundred years ago. Spring is the proper time for transplanting them, but it may be done now by the exercise of a little extra care. The Lobelia plants taken from the beds and potted will come into flower in your greenhouse in spring.

**GRAPE VINES UNFRUITFUL (A Constant Subscriber).**—The garden soil, turf, and wood ashes with which you have replaced the old soil of your Vine border is good. Thoroughly mix the top-dressing of decayed stable manure with it immediately. When new roots have become abundant in the new border then you may apply the top-dressings of manure with advantage. The canes or rods should be at least 3 feet apart; if they are closer together remove some of them. New canes should also be trained up at the rate of three or four a year. This is done by cutting off the old canes close to the bottom spur, and with your rich new border new canes laden with a full crop should be had in two years. Take especial care to crop lightly for a season or two, in order to afford your exhausted Vines the full advantage of rest and fresh soil. When early forcing is practised a fine only 15 inches from the stems would prove injurious to them. Twist haybands closely around the stems and they will sustain no harm. We have twice seen Vines killed through neglecting this simple precaution.

**CHRYSANTHEMUMS SPORTING (C. C.).**—Chrysanthemums occasionally produce sports, or two colours on the same plant, and especially the *Cedo Nulli* varieties, but such an occurrence as you quote is not very common.

**POMEGRANATE NOT FLOWERING (C. J. P.).**—The specimen should be induced to make short-jointed wood in a very light greenhouse, and in summer place the plant in a hot sunny position out of doors, shading the pot, so that the growth becomes matured, and it must not be pruned in the winter. Old plants usually flower more freely than young ones.

**THE CELINE STOCK FOR ROSES (Ignoramus).**—The Celine stock is a very robust, strong-growing, Hybrid Bourbon summer Rose of a pretty pink colour, in no way related to the sub-evergreen Tea Noisette Céline Forester. The Celine was first introduced as a stock by Mr. Curtis, now of Torquay, some forty years since, and is much used now as a rootstock on which to work the strong-growing Teas and Noisettes not congenial to the Manetti.

**HOT-WATER APPARATUS (A Young Beginner).**—We have had no experience of the apparatus you mention.

**ABORTIVE ACORNS (W. H. W.).**—The objects you sent are the "cups" of abortive acorns of the Turkey Oak.

**NAMES OF FRUITS (E. Bonner).**—1, Marie Louise; 2, Maréchal de Cour; 3, Van Mons Leon Leclerc; 4, Doyenne du Comice. (*Old Subscriber*).—1, Beurré Diel; 2, not known; 3, Swan's Egg; 4, Norfolk Beefing. (*S. M. & A.*).—1, London Pippin; 2, Golden Russet. (*E. H. A.*).—1 and 4, Trumpington; 3, Carlisle Codlin; 7, Hollandbury; 9, Nelson Codlin; 11, Cellini; 12, White Doyenne. (*J. Farrow*).—1, Duchesse d'Angoulême; 2, Beurré Diel; 3, Vicar of Winkfield. (*E. B.*).—Probably a small specimen of Vicar of Winkfield. (*Subscriber*).—1, Kentish Codlin; 2, Golden Noble; 3, Braddick's Nonpareil. The others not known.

**NAMES OF PLANTS (A. R. F.).**—The plant with narrow leaves is *Panicum variegatum*, the other is *Selaginella Martensii variegata*. (*C. J. P.*).—1 is *Begonia Friebeii*, the other is probably *Metrosideros angustifolius*, a native of the Cape of Good Hope, that requires a greenhouse temperature, and a soil composed of peat, loam, and sand.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### THE FATTENING OF CATTLE OF FULL AGE.

ON the 14th and 21st of August last we gave the subject of summer grazing of cattle full consideration in these columns. It is now our intention to describe the best method of feeding and fattening cattle of full age—that is to say, of four years and upwards. Although the practice of feeding cattle fat for the butcher at from two to three years old is now much in fashion, yet there is still a desire to follow the old practice of fattening bullocks of full age. This is particularly the case upon the home farms of noblemen and gentlemen, many of whom take

great interest and pleasure in breeding the choicest animals of the sort best adapted for the soil and climate of the district in which their estates may be located—not only for profit, but some are desirous of fattening cattle for exhibition at the metropolitan and Birmingham Christmas shows, as well as at the various local meetings in different parts of the kingdom at other times of the year. Now, many young men are continually coming forward as home farm managers, and are wishing to emulate others in their calling; we therefore propose to lay before them for their benefit the best practice and methods of feeding cattle—not only in the past, but referring to all the latest improvements in the art of fattening up to the present time.

In selecting our breed of cattle for profitable feeding there is no better plan than to select the best-shaped animals of the blood peculiar to the county or district in which the home farm is situated, at the same time taking into consideration the requirements of trade and the markets where the cattle will be most likely sold. When the object is to feed animals for prize competition regard must be had to the class or breed of stock in which they are intended to compete, and this applies to the conditions of most of the large exhibitions, but not to the local shows wherein various breeds compete together. In the latter case it is important to select stock of the highest quality of moderate size, such as the Devons in the south of England, and the Aberdeens in the north or in Scotland, for these breeds when exhibited in competition with the larger animals, like the Short-horns or Herefords, will usually stand before them in the estimation of the judges, supposing they are of equal quality in flesh and fatness. In selecting stock for profitable feeding on the home farm the animals should be well bred and in good condition, and it is also a good plan in purchasing ten or more bullocks from a drove in the fair or market to select the best animals, for the best bullocks will generally become fat the quickest. After selecting them as carefully as we may, some of the animals will not make such good progress as could be desired, and may be probably not exactly healthy in some respects. These, as soon as noticed, should be rejected and sold for what they will fetch, as it does not answer to continue feeding animals at full head if they do not credit their keep. The best way we have found to obtain profitable feeding stock is to select them in the month of October, when the markets are often over-supplied with animals just beneath the quality required by the butchers. Under such circumstances they are sure to be purchased at a moderate price, and being forward in condition will pay for fattening much better than commencing with animals in poor condition. Worked oxen generally pay well, particularly if they are of the Devon or Sussex breed, these being the principal stock which are now used for working on the land; if, however, they happen to be in rather low condition they must be fed very moderately at first with the superior food, such as oilcake and meal, and be gradually advanced by a steady increase of the allowance of food as time goes on, and when half fat they may then be fed with the full allowance, which we will presently describe, until they are sold.

Having selected the cattle for feeding, whether for the ordinary markets or for competition at exhibitions, it is of the utmost importance that the accommodation for the bullocks should be of the best character, but unfortunately in too many instances this consists of only yards and sheds or stalls; but neither of these are equal in advantage to boxes where the animals can be always comfortable with plenty of room to move about and lie at ease in any position when taking their rest. The question of manure also requires consideration, as it is an important factor in considering the advantages of cattle feeding, because in some counties the feeders are satisfied if they do not lose by feeding the stock, and can only obtain a quantity of valuable dung. We, however, say to the home farmer, You must not, and you ought not to be satisfied with such a result, seeing that the practices and experiments which are numerous exhibit a good profit upon feeding, as well as leaving a valuable heap of dung in addition. In our practice we have for the past twenty-five years used all our old

corn barns for feeding cattle in, the accommodation being boxes about 10 feet or 12 feet square, with the dung accumulating under the animals, and the fittings of the boxes being only divided by larch fir poles at a trifling cost, and removable. In some cases we still fill the barns with corn at harvest time, and thrash the crop soon after, and in time to put in the cattle for winter and spring fattening.

We will first consider the method of feeding for profit on the home farm, and for this purpose it is well to select some of the larger breeds like the Shorthorns and Herefords, or their crosses, for the crosses often prove more growthy and make heavier weights for age than the pure-bred stock. On first commencing to feed the animals in the boxes with roots and artificial food, it is important not to give more food, especially of cake or meal, than the animal can assimilate and convert into profitable beef. At this time it is best to feed the bullocks three times a day with roots, cake, and meal, the first bait at 7 A.M., next at midday, and last at 5 P.M., and the quantity of Swedes not to exceed 70 lbs., or of mangold 60 lbs. per day, mixed with 4 lbs. of oilcake and 2 lbs. of meal, the roots being cut with a Gardener's cutter, the meal strewed over and mixed in the skip before placing in the cattle trough, at the same time having always access to rock salt. We prefer that the cattle should receive their fodder of sweet-wheat or oat straw in the rack *ad libitum*, the residue to be used as litter for the boxes. In the event, however, of straw being a scarce article on the home farm, as it often is where pasture land prevails, the straw may be cut into chaff, the roots pulped, the meal and all being mixed together as pudding. Our object in using straw in preference to hay is because it is cheaper, and supplies enough nutriment in conjunction with the liberal allowance of the superior food, and our experience justifies this practice. The analysis of straw by Dr. Voelcker also shows that straw is when cut early almost as nutritious as ordinary pasture hay. As a matter of economy there can be no question about it, for a bullock properly fed as above stated will give a weekly improved value of 10s. on the average. In case hay is used instead of straw it will make a considerable difference in the improved value, in consequence of hay being dearer than straw, and leave only a diminished result of a week's feeding, besides which the animals will digest their food better and will not be subject to the drawback of ill health, which is sure to delay the progress of fattening. When the animals are within six weeks or two months of the time when they are intended to be sold we find it better to feed with nearly the same total quantity of food as above stated, but only twice a day instead of three times, because it gives them more time to take their rest and sleep, which when they are nearly ready for sale very much facilitates the finishing process of fattening.

Let us now consider the question of feeding cattle for exhibition. Where cattle are purchased for the purpose it is well to select animals as nearly ready for the butcher as possible, and particularly to select those which have laid their flesh on evenly, have a firmness of flesh with a soft mellow touch of the skin, and then to feed them carefully for ten or twelve months afterwards, and to use a little of Bowick's flavouring spice to assist digestion, and as the time goes on to reduce the food a little as regards roots or green fodder, continuing the artificial food with regularity. Even after proper feeding and careful housing it is time only that will contribute to success on the day of exhibition. There is yet another plan which in some respects is better than that which we have stated—viz., to breed the stock on the home farm, and let the calf be fat, then a fat yearling, and fatter still at two years old. This plan will give you the best and heaviest animal that can be produced at any given age, the only difference being, that we never can tell whether the animal will lay on the meat evenly until after it is two years old, whereas in purchasing for fattening the bullock shows its character and capabilities by its handling and outline.

#### WORK ON THE HOME FARM.

**Horse Labour.**—There is a considerable acreage yet to be sown with wheat whenever the weather proves open and favourable, and even upon the driest soils the seed time has been very much delayed. At the usual period of wheat-sowing the fodder crops such as trifolium, vetches, rye, &c., had not been done owing to the lateness of the harvest; therefore the delay has been so great that, except under the continual action of ploughing, &c., by steam, it has been found impossible to get the wheat drilled at the usual period. There is not only the portion of wheat to be sown after roots fed off or stored away, but also a portion of the fallow break, as well as some of the clover ley land still to be sown. The snow and frost lately has still further interfered with the work of the home farm. There are, however, so many kinds of work in arrear that at every interval when wheat-sowing cannot proceed other work must be pushed forward before winter sets in. Fallow-plough where the land is tolerably free from couch, but where it prevails to a great extent it is better to rafter-plough the land, and in the first open weather in the spring to run the rafter back, or what is called backstetch the land. By this plan the couch, instead of being buried deep by fallow ploughing, is kept near the surface and the more easily dealt with when the

first dry weather occurs in the spring. There is, however, always work for the odd horse or horses at this period of the year; for not only is it requisite to employ them upon certain work necessary for keeping the farm premises in order, but the roadside earth, ditch cleanings, &c., should be carted to heaps in readiness for use at a future time. After it becomes mellow and decayed in heap it serves for various purposes, such as the bottoming of cattle boxes, pigsties, and where there is a farmyard it should be laid for the dung to be made upon it. In the same manner cattle sheds and yards should have earth placed at bottom to absorb the liquid manure and add to the bulk of the compost, for the earth does not rob the dung but takes up and utilises that which would otherwise be lost. Some farmers object to using earth in this way, saying that it distributes the seeds of weeds; but this argument will not hold good if the compost is applied to pasture or park land, as the seeds of weeds will not grow there like they do upon the arable land. Strictly speaking we have never found that earth used in this way does distribute weeds, because in the act of usage and the heating of the dung in heap their power of vegetating has been destroyed.

**Hand Labour.**—During the late snow and frost this has been restricted to indoor work, such as winnowing corn, &c., preparing roots for the cutter for the shepherd and cattle man. In all cases where any considerable number of cattle are kept a small engine of four-horse power will be found useful for cutting the roots, crushing or grinding corn, and cutting chaff either of hay or straw. Where a lesser number of animals have to be fed upon the home farm horse gear will be found a good substitute on a small scale. Either one or the other is almost imperative, particularly as in many districts women or boys cannot be obtained for the light labour upon which we used to employ them. The crop of wheat is so bad in many instances that it will scarcely pay for threshing, winnowing, &c.; in this case the crop as harvested may be cut into chaff and used for feeding cattle, &c., in conjunction with roots, and thus save some expenditure in cake. In various instances we find the corn not only so thin and light after threshing but also in such bad condition that it cannot be ground into meal, but it is equally available when crushed by Taylor's and other crushing machines for feeding in conjunction with cake and roots pulped. The barley, too, in various cases is but little better than the wheat for meal purposes, and when threshed and screened and looking like a fair malting sample, is often rejected by the maltster, as we find that from 25 to 45 per cent. will not vegetate in the malting process. In consequence maltsters are buying barley from France and other continental States, which they say answers their purpose much better than the English growth. The short crop of roots this year, especially of mangolds, will necessitate severe economy, which may prove a useful lesson to the home farmer, because too many roots are often given to pregnant ewes, or even dairy cows. Every endeavour must now be resorted to for the purpose of eking out a seriously deficient crop of roots, and the use of our inferior corn ought certainly to be made an important factor in the process of feeding all the stock of the farm which usually consume a portion of the cereal or pulse crops. The lambing folds for the Dorset down ewes should now be made, and a spot upon rather sloping ground should be selected for it in a sheltered position facing south or south-west.

#### POULTRY IN FROST AND SNOW.

WINTER is again upon us. It is but little more than six months since we were writing about the management of chickens in frost and snow, and again we have a cold and white world. We will give a few hints how to keep the adult birds comfortable at this season. Fowls do not dislike dry frost; indeed, when the air is clear they seem to enjoy it. We have often observed that birds of the year which have caught cold and seemed to stand still at the damp fall of the leaf, as soon as frost sets in become bright and hard in feather, grow again, and shake off their maladies. Some of our own cockerels which roost in trees seem particularly lively, and crow at intervals through moonlit nights. Frost, fog, and snow are however most detrimental to all poultry. The chief points for a poultry keeper now to look to are good shelter and good food.

Under the heading of shelter various points require consideration. To begin, birds must not be in draughts at roost. We are great advocates of ventilation—indeed, we often let birds of our own roost in trees all the winter, or in sheds entirely open on one side, but then they are out of cold currents of air whistling through cracks. Perches should be low, and the ventilation arranged well above the heads of the birds. Then in their yards they much enjoy a sunny corner. A very little paling, or even a high turf bank, will give them a place where they can enjoy hours of sunshine at a time of year when in an exposed wind-swept run they would only be moping with ruffled plumes. A low perch, too, of fir wood, such as they can grasp, is a great luxury in a yard; it enables the birds to escape from the chill of frost-bound ground. We have often observed poultry taking refuge on low boughs of laurels in winter time, and where natural perches are absent substitutes can easily

be supplied thus:—As soon as snow has fallen a way should be swept from the house to the most sheltered corner of the run, and here the birds should be fed. Snow brings on violent dysentery if eaten, and care should be taken not to throw the food among it, and to supply plenty of water. Iron troughs are the best drinking vessels in winter, being less liable to crack, but whatever vessels are used they should all be emptied at sunset and refilled in the morning.

Food must be liberal and nourishing. When the ground is hard the usual animal food of poultry is not procurable, they must therefore have some substitute for it. A little minced liver daily does them much good, and, averse though we usually are to stimulating foods, we now mix some Spratt's food in the first meal. It is not a bad plan to pour some boiling water overnight on a pan of this food, leaving it in soak all night, and then the first thing in the morning to mix in barley meal with it till it is of the proper consistency to make crumbly balls, such as we have often described. The last evening feed should be of wheat or maize; grain long continues to give warmth to the system.—C.

### BIRMINGHAM POULTRY SHOW.

THE thirty-first Birmingham Show opened on Monday last. The judging took place on Saturday, to which life members are admitted, and others who are willing to pay 10s. The attendance on that day is naturally scanty, but all the more opportunity is given to fanciers to enjoy the Exhibition quietly, and to form a correct idea of its special features. The Show of 1879 will be memorable for some great improvements in arrangement. The poultry annex has been quite transformed; much glass has been introduced into the formerly dark roof, and in lieu of the wooden tiers of pens which so obscured the light the ordinary light wire pens are used throughout. As we have never shrunk from plainly expressing our opinion of the ill arrangement of some details of this Show, specially the lighting and ventilation, we are glad to hail this large instalment of improvement.

*Brahmas* as of late years at Birmingham usurp the first place once held by *Dorkings*. Darks come first and number 157 in the four classes. These are on the whole well represented, there being twenty-six cocks, forty-seven cockerels, twenty-six hens, and fifty-eight pullets. A comparison of the awards here and at the Palace will illustrate the glorious uncertainty which has taken the place of sound judgment as far as this breed is concerned. We have noted below in many instances how the birds here shown stood at the Palace, but a few general examples may not be out of place. The cup cock at the Palace had here to put up with very highly commended, three birds which he had beaten ten days ago being put over his head. The cup cockerel at the Palace is here quite unnoticed; the second Palace hen is also entirely passed by, while the second and fourth Palace pullets have only highly commended and commended opposite their respective numbers. The £10 cup is here awarded to a cockerel that in the opinion of most fanciers should not have been noticed. There are many better birds in his own class, while the winners in the three other classes are also superior to him. It will probably be his turn to be unnoticed next week at Hull, unless indeed the award be "endorsed" there by the Judge. We would suggest that at the great shows next year some practical fancier be invited to make the awards in Dark *Brahmas*. This plan has worked well in other varieties, why not let *Brahma* men have a chance? Cocks.—Cup (Joyce) a good all-round bird in fine condition. His faults are that he is hocked, has a few white splashes at side of breast, and has a comb which, though small, points upwards at the back. He was closely pressed by third (Ansdell), a massive bird with fine head and ample leg feather, but not quite deep enough in marking and somewhat out of condition. This latter point probably turned the scale against him. Second (Kendrick) though good in general shape and colour, has a round back and a comb that should in our judgment have excluded him from the prize list; he was unnoticed at the Palace. Fourth (J. Wood), the cup Palace cockerel of 1878, small and so yellow in back that the award is to us unintelligible. After first and third we liked 22 (Lingwood), the winner at the Palace; he is here in better condition generally, but seems to have lost leg feather a little. 11 (Comyns) highly commended, good in shape and colour but heavily hocked; 14 (Norris) small but of fine quality, and 24 (Newnham & Manby) very highly commended, rather dark and not quite out yet, but otherwise a good bird, struck us as being the pick of the rest. Cockerels.—£10 section cup (Ansdell) an awkward-looking bird in bad condition, with both wings out, ugly hocks, legs too close together, hackle slightly twisted, and has a tendency to brown on shoulders and back; his only good points were his fine head and comb and his large size. Second (Lingwood) a nearly perfect bird with a somewhat mossy saddle and perhaps too short in back; he should have won easily, while we should have placed same owner's third-prize bird second. This is, we think, the second Palace cockerel; his comb seems to be going rather coarse, and his saddle also is mossy, but he is otherwise a grand bird. Fourth (Hall) a narrow bird of no substance; fifth (J. Wood) a hocked bird with white in tail and mossy saddle, but of fine carriage. We should have placed 45 (Shuter),

good shape and colour and fine comb, third; while amongst the others we noted 30 (Holland), very highly commended, a shapely bird of the short-legged type, and 50 (Ashworth), very highly commended, a large and well-formed cockerel. In both cocks and cockerels coarse combs were far too prevalent, while amongst the noticed cockerels we saw with surprise several with distinctly red or brown shoulders. Hens.—Cup (Clarke) a medium-sized hen of good clear type of pencilling, not quite moulted out yet, which may account for some little irregularity of marking at top of breast and on wing. Second (Lingwood) a grandly-made large hen, even in colour and marking, but not quite so clear as the winner; we should have placed her first as being of the true type to breed from for both sexes. Another of similar pattern was (same owners), 96 highly commended, fourth at Palace. Third (J. Wood) a well-marked bird of the pure grey type, inclining to smallness, and just a trifle deficient at top of breast. Fourth (Peake) beautifully clear on breast, but showing a very objectionable dark brown tinge on the back and wings. 76 (Norris) second Palace, here unnoticed, excellent in marking, though not quite satisfactory in shape. 94 (Ansdell) worth a very highly commended. This was an extremely good class, many of the merely commended birds being of first-rate quality. Pullets.—Cup (Percival) the Palace winner, again in her right place. She is of fine size and shape and good pencilling, a very different bird to her yard mates, fourth and fifth, which were both of the mealy type which Mr. Teebay seems so much to admire. The fourth particularly was quite unworthy of her position. Second (Wheaton) was the third Palace pullet; she is of good shape and well marked in a way now somewhat out of fashion, but sound none the less. Third (Peake) a large awkward-looking pullet of the black and white pattern, failing at top of breast. We thought 100 (Percival), 105 (Newnham & Manby) second at Dairy Show, 110 (Fryer Bennett) commended, fourth at Palace, 112 (Kendrick) highly commended, 121 (Comyns) commended, 128 (Wood) very highly commended, 128 (Percival) highly commended, and 140 (Fryer Bennett) highly commended, second at Palace, all better than third, fourth, and fifth. The pullets were a very good class, but did not appear to advantage owing to the variations in the light.

Lights are not so numerous as the Darks, but all the classes are good. The cup cock (R. P. Percival) is a small and very short-legged bird, almost dumpty; his shape is good, his foot feathering very fine, but, of course, accompanied by hocks. We much admired the second cock (A. Ogden), a large upstanding bird; a thorough *Brahma*, with good head, well-marked hackle, and soft full leg feathering. The third (G. B. C. Breeze) cock is not unlike the first in shape, with darker hackle marking, and fine shape of back. Fourth (H. Tomlinson) a big bird, with good leg feathering, but deficient in cushion and rather yellow. Mr. Ward's commended bird struck us as being good, though out of condition. The cup cockerel (P. Haines) is a pretty bird with neat head and comb, and good ground colour and hackle marking. Second (P. Haines) a taller type of bird and well grown; he might be whiter. Third (Mrs. J. T. Holmes) apparently very young; good all round. Fourth (S. Lucas) good in colour and marking, but far too narrow in body. Fifth (Rev. G. S. Davies) a pretty bird in head, and fine in foot feathering. 199 (Williams) a good bird, which we should have put in the list. In hens the cup (Mitchell) goes to a splendid bird all round; not very large, but good in every point, with specially fine cushion and foot feathering. Strange to say, we hear she was unnoticed at the Palace. Second (White) another very nice hen; good all round. Third (Onions) pure in whiteness, with well-striped hackle, not much foot feather. Fourth (Ive) as large as any; very fine in fluff. The hen class was a large and generally good one; many nice birds in it had to be content with admiration and no cards. The cup pullet (Haines) is a lovely shapely bird, more hocked than we like. Second (Breeze) attractive in colour, and good in size; she held her wings quite loose when we saw her. We did not much like the third (Tomlinson). She is good in back and hackle, but much hocked, and not fluffy enough. Fourth (Tedd) not a striking bird in any point, but fair all round. Fifth (White) promises to be a very fine hen. At present she looks a little long in back. There are many other fine birds in the class, amongst them Mr. G. H. Wood's Palace cup bird, here unnoticed. We seldom look much at selling classes, but could not fail to be struck by the great size of Mr. Christopher Morris's Light male bird in this class. We saw him before the Judge went round, and subsequently observed that he had obtained first prize. Mr. Horsfall's second Light bird, too, in the same class is a handsome cock.

*Spanish*.—Cocks: Cup (E. Jones) an easy win in a poor class of four. His face and earlobe are long, broad, and of good quality. Second (Bull) rather full and rough, round eyes, and not through his moult yet. Cockerels.—First (J. Walker) a fine bird, with good long earlobe, perhaps a little rough in quality. Second (Alsopp) shows red over eyes, and for that reason should have given place to 1221 (Walker). The class had only thirteen entries, and, except the birds noted, was of no great merit. Hens.—First (J. Woods) a fairly good bird, as also was second (Winfield & Davies), but there were only five entries in the class, and two were absentees. Pullets (five entries).—Cup (J. Woods)



looked washed-out in face, pale in comb, and rusty in plumage; should, we think, have given way to second (Walker), which was a fine-sized bird in the pink of condition, with a beautiful quality of earlobe.

**Dorkings.**—Mr. Burnell's grand Dark cock appeared here again, and again, as at the Palace, took the cup; after him the class of old Dark Dorking cocks is by no means equal to that of the Palace. Second (Leno) is rather too dark a bird in colour, but he has a good comb and white feet. Mr. Drewry's very highly commended cock is a large bird and good, barring his lopping comb. Mr. Butler Smith's, too, is a good bird, his weak point being feet. Cockerels are hardly equal to the Palace. First (Miss J. Milward) a fine and good bird in comb and colour, but his feet might well be much whiter. Second (Mrs. Troughton), pretty short-legged bird that has so often won. Third (White) a very dark bird with good comb and feet. Fourth (R. Gladstone), a large bird with poor comb and horrid dark feet. Messrs. Smyth show a large sprightly cockerel with good feet, but spoilt by a lopping comb. Mr. Butler Smith's an immense bird, but with a gouty toe. The cup Dark hen (R. Gladstone), is a grand bird with short legs and nice white feet. Second (B. Smith) another good hen, the cup bird of last year, we believe. Third (White) rich in colour, and little behind the other winners. Pullets have the prevailing fault of dark feet. First (Bell) a very large bird, but too long on the legs. Second (Drewry) large again but very dark in feet. Third (Mrs. Troughton) a pretty pullet, though not good in comb. We like Messrs. Smyth's highly commended pullet, we think one of the Palace winners, and Mrs. Hind's highly commended bird has white feet. The Silver cocks make a small class, and we cannot agree with the awards. First (Cranston) is a short-legged well-shaped bird, but the whole of his neck hackle is ticked in a peculiar way like a Silver-spangled Hamburgh. Second (Denison) is about the worst bird in the class; he has a horrid comb and a grizzled breast. Cockerels make a large class, but the greater number of them are far too heavily striped in neck hackle. First (Cranston) is all round the finest cockerel, but he has much white on breast, and his fifth toes are swollen. Second (Lady Bagot) we consider a great mistake; the cockerel has a very dark hackle and a broken fifth toe. Third (Cresswell), not very large but short on the leg, and for colour the best bird in the class. The two winning hens (Burnell and Cranston) are good in size and form and white in feet, but both have bumble feet. Pullets are a pretty good class. First (Smalley) a fine bird, but dark in feet. Second (Burnell) a large pullet, which might be better in colour. Third (Cresswell) the very-white-footed pullet which was first at the Palace Show; 482, very highly commended (Cresswell), also a handsome bird. Cuckoos though few are better than usual, but the cup bird (Howe) is a wonderful specimen. How such a judge as Mr. Dixon could give a cup to such a creature over the heads of such good Whites we cannot conceive. He is an evident mongrel, long-legged and breastless, with Cochins head, tail, and voice, single comb, bad marking, and small feathers down his legs. We fancy one of his parents must have been a Plymouth Rock. Such mistakes are very disheartening to breeders of honest Dorkings. Nearly all the fanciers of the breed were indignant, and some of them wished to make a protest on the ground that the bird is not a Dorking at all, but were informed that it was not open to them to do so. The second (Playfoot) Cuckoo cock is a handsome short-legged bird, and both the winning hens (Countess of Dartmouth) are very good. The four White cocks are four as fine birds of the kind as we have ever seen together. First (Logan) very large and good, but too yellow. Second (Cresswell) the short-legged very white Palace cup bird. The other two (Pilgrim and Countess of Dartmouth) both deserved their high commendations. The first (Logan) cockerel is the Oxford cup bird, short-legged and set. Second (Pilgrim) a very pretty bird, with a beautiful comb. In hens the first Palace bird (Cresswell) again wins, looking well and large. Second (Cresswell) a square good young hen. There is but one first-class bird (Logan) among the four pullets, which wins; second (Pilgrim) is very fair.

**Cochins** always hold their own at Birmingham. Together with their Langshan cousins they number close on five hundred pens. Mr. Hewitt's powers seemed sorely taxed to get through the task of judging them; he considered the light insufficient for the purpose, and so had the majority of the birds carried by assistants from their pens. We watched the men carrying the birds about roughly and awkwardly, and saw their frightened looks on being thrust hurriedly into fresh pens, and much doubt whether the best birds will in all cases have been thus discerned. The £10 cup for the best Cochins in the Show goes to the wonderful Palace Partridge cockerel, Capt. Heaton's purchase at £68. In Buff cocks, first (Rigg), is the grand Palace winner, which we need not describe again. The second Buff cock (Procter) is of a very even bright yellow colour; he has a black tail, and is not well through the moulting. Third (Procter), a very pale bird, mealy on the wing, very good, however, in foot-feathering. We preferred 598 (Percival), a thorough Cochins, second, we believe at the Palace; also another grand bird of Mr. Percival's, 611. Cockerels make a very large class. It struck us that a great many of them have very small and mean combs, which we look upon as a defect, taking off

from the look of dignity which a Cochins should have. The cup cockerel (Swindell) is good in shape and feather and brilliant in colour. We do not at all like the second (Stainton); he has ugly reddish-brown wings, though his shape is undoubtedly good. Third (Cockroft and Ashby), a deep-coloured bird, good in comb and shape; his wings not light enough. Fourth (Pye) of a lovely bright yellow colour. Another pretty bright-coloured bird is fifth (Tomlinson); we do not like the black and white in his tail. The class of hens is indeed a wonderful one; the cup bird (Procter) is not very large, but a marvel of shape and feathering. Second (Bloodworth), a larger bird, but not in such condition as the first, and not so fine in foot-feather. Third (Procter), a nice canary-coloured bird. Fourth (Percival), an immense hen. We like 657 (Chatworthy), claimed at twelve guineas; indeed half the hens in the class are worthy of prizes. The cup pullet (Procter) is a rich, deep, even Buff. Second (Darby), is a very pretty pullet, good all round, a shade lighter and brighter than the first. Third (Lady Gwydyr), a young-looking bird, canary-coloured, shapely and fluffy. Fourth (Tomlinson), a large bird, promising to make a fine hen. Fifth (Procter), good in shape and feathering but not large. Partridges quite hold their own, though in numbers they do not come up to the Buffs. First (Heaton), a fine cock all round, though we have seen better. Second (Heaton), a very grand old bird but looking tired. Third (Wood), remarkable for fine foot feathers. The cup cockerel (Heaton) is the wonderful Palace bird which we need not describe again; the only part of him which we do not think perfection is his head. Second (Tudman), a good bird in colour and comb, far below the first in fineness. Third (Sharpe) is short in neck hackle at present, but we liked his lower parts better than the second. Fourth (Macrae) too much hocked, but fine rich black in fluff. Captain Heaton has a well-shaped cockerel in pen 788. In the hen class we observed an empty pen (Mrs. Forsyth Grant's), and a ticket to the effect that the bird intended for it had been rejected for being sent contrary to a regulation in a divided basket; we wish this rule were altered. The cup Partridge (Wood) hen is a large bird, lovely in pencilling, but not well feathered on legs and feet. Second (Sharpe) a fine bird in form and size, inclined to be grousy in colour. Third (Wood) small, good in shape and pencilling. 794 (Wiggins) a massive reddish hen. There are several other hens in the class splendid in form though not sufficiently clearly pencilled to win.

The first (Wood) pullet is a thorough Cochins in shape and good in breast-pencilling. Second (Tomlinson) beautifully bright in colour and clear in pencilling, but loose in wings. Third (Macrae) struck us as a narrow bird. Fourth (Heaton) very large, with small clear pencilling; she should make a splendid hen, though at present a little too long on the leg. The first (Percival) White cock is a fine bird in condition and shape, but has regularly Buff wings, which we consider a fatal blemish. We much prefer the second (Chase), magnificent in breadth and depth of fluff. He is not in bright condition. 853 (Darby) a very fine bird. In cockerels the position of the first and second Palace birds is reversed. The winner (Ludlow) is the bird we much admired at Oxford, and which has changed hands at high figures; but we certainly should not have put him before the Palace winner (Darby), which is far larger, and in every point his equal. The White hens are a capital class. The winners (Tomlinson) are both grand hens, with little to choose between them. Many others would in ordinary years have been in the prize list. We thought the pullets better than at the Palace. First (Darby) is the second Palace bird, which we there preferred to her sister, here unnoticed, though there first. In Blacks Mr. Lightfoot's cock is an easy first in his class. Second (Aspden) we do not much like, and prefer Mr. Darby's very highly commended bird; a winner, we fancy, at the Palace. The Blacks were, we believe, judged by gaalight, which may account for some change of position from other shows; but considering this fact, and that some of the classes were partially in dark lower pens and partially in light upper ones, we think the awards were on the whole well made. The first (Darby) cockerel is an easy first, and very handsome. He was, we think, third at the Palace. Second (Storer) a pretty but small bird. The first (Cook) hen has a fine green gloss, but an ugly comb; second (Darby) in nice condition. The first (Turner) pullet is a beauty, and wins easily. Among the highly commendeds are some very fine pullets, which will make finer hens than are often seen in the Black classes. In the Cochins Selling class we observed a pair of Cuckoo hens, one of them very good for her colour.

**Langshans** have two large classes, and seem to have been judged in a way which should please their admirers.

**Andalusians.**—The first (Jones) pair are fine in form; the pullet well laced, but the cockerel is too red in lobes. Second (Stevens) a large pullet, with a neat and pretty cockerel. Third (Troughton) both good birds.

**Hamburghs.**—The cup Golden-pencilled cockerel (Whitaker) has good comb and colour, but poor tail; his lobes are too large for our taste. Second (Gilroy) a good bird, rather high in comb. Third (Rawnsley) good in comb, but too much contrast between the shades of his neck hackle and his saddle. The Duke of Sutherland's highly commended bird has a splendidly laced tail. The first (Driver) Golden-pencilled pullet is a gem, most beauti-

fully marked on the tail. Second (Bell) has a pretty comb and rich ground colour. The class is an even one. The winning Silver-pencilled cocks are both nice birds. The first (Beldon) good in comb and figure; the second (Snell) has the best-laced tail. The Silver-pencilled pullets are nearly all very fair, without any one bird being very striking. The first (Beldon) is well barred up the tail.

*Any other Variety.*—First Mr. Beldon's beautiful Buff Polish, in splendid condition and trim. Second (Gabb) a curious large dark pair of Asiatics, called "Mandarins." The cock has points of resemblance to a Dark Brahma. The hen reminds us of the illustrations of the early imported Cochins presented to the Queen. Third (Bradbury) Plymouth Rocks. Two pairs of fine large red birds, called Tankervilles, are shown. Mrs. Troughton shows a nice pair of Courtes-pattes, and Mr. H. W. Howe some Cuckoo Dummies.

The first (Hedges) prize pair of Aylesbury Ducks weighed 18 lbs. 11 ozs.; the first (Wakefield) Rouens 20 lbs.; the first (Nicholls) Pekins only 13 lbs. 2 ozs.; the first (Rawson) White Geese 44 lbs. 14 ozs.; the first (Rawson) Grey 38 lbs. 6 ozs.; the first (Gladstone) old Turkey cock 37 lbs. 3 ozs.; the first (Wykes) young bird 26 lbs. 4 ozs.; the first (Kendrick) old hen 24 lbs.; and the first (Lythall) young bird 17 lbs. 8 ozs.

*Polish.*—These beautiful fowls numbered ninety-one pens in the twelve classes, and as a whole are of very fine quality. Black cocks numbered six. First (Shaw) is a splendid bird in fine plumage, with a very fine large well-formed crest, very free from black. Second (Lecher) a good bird, slightly yellow in crest, which was, however, very good in shape, and the bird in fine condition. 1277 (Broad) commended, is the Crystal Palace winner, a very good bird, but looking rather down in condition. 1278 (Shaw) highly commended, a capital bird with a good white crest. In cockerels (seven), first (Lecher) was a splendid bird, grand in crest, large and well shaped. Second (Rawnsley) has a good, large, well-formed crest, fine in shape and in good condition. 1283 (Partington) a well-crested bird, rather small; 1284 (Shaw) good, but the crest a little too much down in front; 1288 (North) a very good bird but out of health; 1285 (Lady Dartmouth) empty. In hens (six) first (Broad) the well-known hen, Pattie, looking well in spite of age; in size and shape of crest a grand bird, though the crest shows a little too much black in front. Second (Shaw) very good in crest and a fine hen, though perhaps scarcely so good as 1290, belonging to the same exhibitor; this hen had a particularly finely shaped crest. 1294 (North) a very fine crested hen. In pullets (four) first (Partington) is a very handsome bird, very good in crest. Second (Partington) a pretty bird, very globular in crest. 1298 (Shaw) rather loose in crest; 1297 (North) empty. Golden cocks formed a class of seven pens. First (Silvester) is a bird of nice crest, good rich colour, beautifully laced wings but too dark on the breast. Second (Partington) is a splendid crested bird, though rather flat yet; very good in colour and well laced on the breast and wing, will be the best bird of the two in time. 1806 (Burrell) a good coloured bird. In cockerels (nine) a splendid class. First (Silvester) is a richly coloured bird, very good in crest and well laced on the breast and wings; he was first at Oakham last week. Second (Partington) is fine in crest and rich in colour, also well laced, but a little round in the back. 1810 (Partington) a well marked and good coloured bird; 1811 (Dawson) a fine crested and well marked bird; 1812 (Huish) was, we believe, the Crystal Palace second; if so, he has not improved since then. 1818 (Rawnsley) very good in crest and shape, but rather dark in colour; 1814 (Hodson) very good, capital in crest. In Golden hens (nine) another fine class. First (Millner) is a splendid crested hen, but not good in either colour or marking. Second (Boothby) is a good crested hen, exceedingly rich in ground colour, well marked and quite clear in tail, a very handsome bird; 1817 (Hopwood) a good hen; 1818 (Silvester) too spangled in marking but good in crest; 1820 (Boothby) a well-laced hen, good in crest and with scarcely any white in it; the Crystal Palace second. 1819 (Partington) a fine hen, very well laced; 1823 (Partington) a fine crested hen, rather light ground colour. The Crystal Palace third, 1822 (Burrell) the winner two years ago; a very good hen. In pullets (seven) first (Jarvis) is a rich-coloured well-laced bird with a good well-formed crest, a handsome bird. Second (Silvester) is the Oxford cup pullet, splendid in crest, but too dark in colour. 1830 (Rawnsley) very fine in crest, dark in colour and marking. 1825 (Burrell) a good pullet with a pretty crest; 1829 (Dawson) good in crest but round in back. In Silver cocks (eight) first (Burrell) is the Crystal Palace winner, a splendid bird, with a crest grand in size and shape. Second (Burrell) is the second Palace bird, a very good bird in every point, excepting a little imperfection in the back. 1832 (Adkins) splendid in crest, well marked, and a very good bird; 1833 (Lady Dartmouth) and 1835 (Adkins) are good birds; 1836 (Bloodworth) a very fine bird; 1838 (Smith) a very fine bird, splendid in crest, and well marked on the wing and breast. In cockerels (ten) first (Adkins) was very good in crest, clear in colour, finely spangled on breast, and laced on the wing. Second (Bloodworth) is splendid in crest, beautifully laced; a very fine bird. 1843 (Adkins) good; 1844 (Smith) good in crest and a

well-marked bird. 1848 (Burrell) good but young; 1849 (Adkins) good, excepting a small comb; 1847 (Smith) empty. In hens (six) first (Adkins) which won the cup for the best Polish fowl in the Show is the Crystal Palace cup bird; a beautifully laced very handsome hen, splendid in crest. Second (Burrell) also a very good hen, is, we think, the Palace third; a fine crested well marked bird. 1852 (Lady Dartmouth) a splendid hen, immense in crest; 1853 (Adkins) another very good hen with a capital crest; 1854 (Bloodworth) a very good hen; 1855 (Adkins) a good well-laced hen, very fine crest. If we recollect aright this was second at the Palace. In pullets (twelve) first (Adkins) is a splendid crested bird; good in shape, rather heavy in marking. Second (Smith) is a very good one, very well and evenly laced and with a capital crest. 1856 (Smith) a very handsome pullet, beautifully laced; 1861 (Huish) nicely laced; 1863 (Smith) good in crest and prettily marked; 1865 (Burrell) a good crested bird, very well marked; 1866 (Bloodworth) a good well-laced pullet.

*Sultans* (six) are a fair class. The first (Beldon) much the best; both birds being splendid in crest. Second (Shaw) are a nice pair. Third a very good pair, but the cock is not yet through the moult. 1870 (Wright) a very good hen; 1873 (Jenkins) empty.

*Malays* numbered forty-seven in four classes. In cocks (fourteen) first-and-cup (Lecher) for the best Malay cock is very good indeed, splendid size, good in head, and in fine trim; a good dark bird. Second (Lowe) is a very large, strong-made, black-breasted red bird, good in head, and of capital shape. Third is a very fine streaky-breasted bird, large and of good shape. 1070 (Nicholls) and 1080 (Brooke) are good Whites; 1073 (Copp) and 1075 (Pearce) are good birds; 1071 (Burnell) a good dark Red; 1076 (Michael) a good tall well-shown bird. In cockerels (ten) we think the winner must have run the adult bird hard for the cup. He is a very fine, tall, reachy bird, large and fine in shape; fine also in limb, and of rich dark colour. Second (Fairlie) is a very good rich-coloured bird, fine in colour, size, and make. Third (Strugnell) a very good, large, coloured bird; 1087 (Venables) a good bird; 1086 (Ridley) was empty. In hens first (Brooke), which won the cup for best Malay hen or pullet, is a very good, large, dark brown bird, a little marked on the breast, &c. Second (Lowe) is also a good large hen, darkish in colour. Third (Burnell) is lighter in colour; a good, large, well-made hen. 1192 (Fairlie) and 1193 (Burnell) are good lightish-coloured hens; 1194 (Ridley) a good, large, well-shaped bird, darkish colour; 1101 (Strugnell) a large hen; 1104 (Burnell) light in colour; a good large bird. In pullets (ten) first is very good in shape, fine in size, and a good dark brown; second large, good in shape, and dark in colour; third a very good pullet of lighter colour; fine shape. 1109 (Ridley) good; 1110 (Lecher) a large bird; 1111 (Venables) dark and good.

## VARIETIES.

MR. CRESSWELL requests us to announce to the members of the Poultry Club that his address henceforth will be Morney Cross, Hereford.

— THE Marquis of Lansdowne, who is the owner of property near Kenmare, county Kerry, has sent 175 tons of Champion seed potatoes to be distributed among his poorer tenantry for planting for the next crop.

— THE SMITHFIELD CLUB CATTLE SHOW.—The general arrangements for the forthcoming cattle Show, which opens at the Agricultural Hall on Monday next, are completed, and accommodation has to be provided for fifty head of cattle more than last year. There is also a considerable augmentation in the entries in the sheep and pig classes. This increase in the cattle is due to the relaxation by the Smithfield Club of a rule which prohibited the exhibition of any animal at the Metropolitan Show which had been exhibited at any provincial show within a period of one month previous. This entirely excluded the exhibition of any of the stock of the Birmingham and other shows, which will now have an opportunity of competing at the Smithfield Club Show. The prize list of this year has been considerably increased. The Queen will, it is understood, be found as a competitor with the Prince of Wales in the Devon and Shorthorn classes of cattle, but not with the same animals sent to the Birmingham Show, and also in the pig classes; and the Prince sends some South Devon and other sheep from Sandringham in competition with the Duke of Richmond, Earl Walsingham, and other Southdown and Leicester breeders. The increase in the demands for space for implements is so great that much difficulty has been found in affording accommodation.

— WE have received from Messrs. Christy & Co., Fenchurch Street, a manual on "Hydro-Incubation," by Thomas Christy, F.L.S., which appears to treat the subject both accurately and exhaustively. It is well illustrated, and forms, as is stated on the title page, "a guide to commercial poultry farming." This work will no doubt prove of considerable utility to many persons who are interested in artificial incubation.

— THE Birmingham cattle and poultry Show, held at Bingley Hall and which closes this day (Thursday) has proved one of

the most successful on record. The following extra prizes were awarded in the cattle and sheep classes:—Silver cup, value £25, given by Earl Howe, for the best animal in the cattle classes bred and fed by exhibitor.—J. Merson, Craigwillie, Aberdeenshire. The Elkington challenge cup, value one hundred guineas, for the best animal, to be won two years successively.—H. D. Adamson, Bulquharn, Aberdeen. £100 for the best Hereford.—Mrs. Edwards, Wintercote, Leominster. £100 for the best Shorthorn.—H. D. Adamson. Fifty guineas for the best Devon.—Thomas Dyer, Lytchett, Minster, Dorset. Twenty guineas for the best Longhorn.—Major-General Sir F. Fitywygram, Havant, Hants. £50 for the best Scot.—W. McCombie, Tillyfour, Aberdeen. £50 for the best animal in classes 20 to 25 inclusive.—Mrs. McWilliam, Buchan, Gartly, Aberdeenshire.

At the same Show Messrs. Webb & Sons, Wordsley, Stourbridge, notwithstanding the very unfavourable season, have a splendid display of roots. Conspicuous amongst the exhibits is a very fine collection of roots grown by Her Majesty the Queen. Webb's Imperial Swede is largely and well exhibited. Turnips are excellent, particularly Webb's Purple Top Mammoth and Green Globe. Mangolds Webb's Colonel North, Yellow Globe, Mammoth Long Red, Yellow Intermediate, Webb's New Kinver Yellow Globe, and Yellow-fleshed Tankard are all of fine quality, considering the season. Very fine specimens of Webb's Green Kohl Rabi command notice. A remarkable collection of specimens of natural Grasses, with Webb's Challenge White, Square Head, and Golden Drop Wheat, Webb's Kinver Chevalier Barley, and Challenge White Oats, also a fine collection of Potatoes, Onions, Carrots, and other vegetables assist in making this stand complete.

#### PIGEONS AT THE LATE CRYSTAL PALACE SHOW.

I COULD not but observe when at this Show the decrease in number of the Pigeon classes, and notably the loss of the four pair classes which in their large handsome pens used to attract so many eyes, and, indeed, were the gems of the whole Exhibition. I was not, however, prepared for the great falling-off which a minute comparison of the catalogues of 1878 and 1879 reveals. In the former year there were 1677 pens of Pigeons; in the present year 1497 pens only, being a falling-off of 160 pens. Nor was this all. The selling class of 1878 was only 98 in number, this year it has risen to 142; showing, in fact, that there are a much greater number of persons who want to dispose of their birds this year than last. I invite attention to the following table, showing exactly how matters stand, asking my readers to bear in mind that not only is there a diminution in almost every class, but that the forty-four additional pens for sale are reckoned in the full number, so that the real diminution reached to upwards of two hundred pens—a significant difference indeed! Is the fancy quite as high-class as formerly? Are there no low tricks connected with it from which high-minded fanciers shrink? Whatever the reasons are, the fact of the deterioration of the Show in numbers and quality remains. I invite a careful study of the following table, which I believe is an accurate one.

Class.	Number. 1878.	Number. 1879.	Increase.	Decrease.
Pouters	108	151	43	0
Pignies	10	16	6	0
Carriers	262	179	0	99
Dragoons	48	212	0	42
Almond Tumblers	20	22	0	26
Balds and Beards	33	21	1	0
Other Short-faced Tumblers	49	31	0	1
Barbs	108	48	0	3
Jacobins	61	108	0	12
Fantails	17	49	0	4
Nuns	9	13	0	3
Trumpeters	19	6	0	0
Trumpeters (young)	no class.	11	11	0
English Owls	98	73	0	20
Foreign Owls	18	16	0	2
Turbiteens	6	none.	0	6
Turbits	114	91	0	23
Magpies	43	34	0	9
Swallows	no class.	14	14	0
Archangels	16	12	0	4
Runts	20	19	0	8
Flying Tumblers	20	14	0	6
Short-faced Antwerps	16	11	0	6
Homing Antwerps	122	129	7	0
Any other variety	16	22	6	0
Best collection of four pairs, excluding Carriers and Pouters	21	none.	0	21
Best pair bred in 1878 or 1879	15	15	0	3
Flying Class of Homing Antwerps	65	60	0	5

By the above it will be noticed that only one class has greatly increased—viz., that of Pouters—those fine birds which had been too much neglected by English fanciers, and which are perhaps the very highest type of Pigeon; and everyone, therefore, must

rejoice to see them greatly advance. The decrease of Carriers and Dragoons is surprising; that in Almond Tumblers by no means so, as honest minds and kind hearts resent and shrink from shaping poor birds' heads with a wooden machine. If judges would but make colour the point, and head and beak very inferior points, then true beauty would be cultivated and cruelly receive a check. In almost all the classes it will be seen there is a decrease. Swallows and young Trumpeters must not count, as they had no class in 1878; neither can a slight increase in Homing Antwerps reckon much, as they are not so much birds of fancy, or true fancy Pigeons, as birds of usefulness. What are we to say to this great falling-off in the first Pigeon show in the kingdom? The answer is difficult. Are we never again to see such shows in the Palace as in former years?—WILTSHIRE RECTOR.

MR. J. J. MECCHI of Tiptree Hall, Kelvedon, Essex, informs us that he will, for the public good, send (on application accompanied by a postage stamp), instruction for the construction of the "Parson's" or "Front-fire Grate." The tested gain by the use of this grate is an increase of 15° of temperature with a saving of one-third in fuel. Mr. Mecchi believes that there are several millions of grates on the wrong principle, hurrying the heat up the chimney instead of into the room, and thus causing an indraught of cold air—this is especially the case with strong-drawing registers. No part of a grate should be of iron, except the thin front bars, for iron is a conductor away of heat, but fire-bricks are not so.

#### SOME RECENTLY OBSERVED FACTS REGARDING QUEENS.

SOME four or five years ago my attention was first drawn to the fact that queens frequently became useless from the loss of a leg or a part of one, or owing to the paralysis of an otherwise perfect limb. Since then my first impulse on inspecting a hive is to observe whether her majesty has the regulation number of these locomotive appendages. The result is a positive conviction that in almost every case of the failure or loss of the queen there may be found this deformity. I cannot account for it, but there is the fact, and I commend it to the attention of every bee-keeper as of great importance. By keeping a sharp look-out the disabled queens may be discovered and superseded before the stock has seriously suffered. Occasionally the deformity is but slight, only the claws of one foot being wanting, in which case the queen may be still able to balance herself as in the act of laying eggs; but more frequently so much of the limb is gone that she cannot do this, though quite able to walk about, and in the worst cases she cannot even hold her place on the combs, but wanders about the floorboard, generally ending by crawling out as if resolved to rid the stock of her useless presence. The deformity is not confined to queens of any particular age, as I have in some cases had to destroy virgin queens for the same reason. Neither is it more common in bar-frame hives, as if it might have resulted from accidental pinching. It is common enough even among imported queens just arrived. In some cases the portion of the leg left turns black and rigid, while in others it moves in a natural way.

I can easily fancy queens caged amongst hostile bees having their legs or wings torn through the meshes of the cage, and indeed have observed this more than once, but the most of the cases I have observed were entirely apart from such a cause. I have also frequently discovered bees encasing their own queen and hunting her in a hostile manner about the combs; but in such cases I generally discover her dead body thrown out within a day or two, generally, however, maimed. Whether the result of hostility on the part of the bees or of a hitherto unknown disease, the facts are as I have indicated; and, as I have never observed any reference to them by any other writer, I would express a hope that bee-keepers will give attention to the matter and lay the result of their observations before us.

It has hitherto been generally supposed that if, by stimulative feeding or otherwise, we can coax a queen into laying eggs, we can depend on getting brood reared. Much to my chagrin this fallacy is now exploded. During the late autumn, as a result of my experiments in pollen feeding, I came to the conclusion that as both larvae and adult bees required nitrogenous food, no brood could be reared without pollen, and I think my experiments have fully demonstrated that. But it rather took me by surprise to discover that in some of my hives that reared no brood for many weeks, the queens were steadily laying all the time. I had been feeding some stocks on flour, candy, and syrup, and others on syrup alone. The former had several cards of brood even into November, while the latter, though plenty of eggs were always found in the combs, never reared any. Day after day for weeks the eggs were seen, frequently two or three in one cell, but never a grub. The stocks were fairly good and quite able to maintain a hatching temperature. I came to the conclusion that as the eggs hatched out and the larvae died from want of pollen food, fresh eggs were laid in the same cells, and thus my poor queens had been kept laying every three days as many eggs as others were doing with so much better results in

three weeks. Regarding it as certain that such treatment would inevitably "play out" the best queen long before her natural term, I secretly resolved to abandon mere syrup feeding for the future, unless at a time when natural pollen is being gathered. But here some will object that there might be plenty of stored pollen in the hive, in which case the syrup would be sufficient. It might for a very short time—that is, so long as the syrup came in very slowly indeed; but as soon as syrup or honey is stored in any quantity, the stored pollen is entirely covered up, the bees themselves not knowing in which cells to seek it. This is even more likely to be the case in autumn than at any other season, owing to the instinct of the bee leading it to store its supplies right in the brood nest, where the pollen is generally found. In such a case I have no hesitation in saying that no amount of mere sugar feeding will cause brood to be reared unless natural pollen is being gathered at the time. Thus in fact are our valuable queens being overtaxed for nought. Yet how naturally the bees will, without any such stimulant, start brood-rearing even in midwinter! Why? Because by that time they have consumed so much of their honey that the buried pollen is once more discovered, to be applied in the most natural way to the rearing of their young.

As the result, then, of the past season's experience I would propose the following rule as to feeding—viz., when brood-rearing is no object feed as rapidly as possible, otherwise feed very slowly, and make sure either that there is considerable stored pollen in an unsealed state, or that it is being gathered at the time, or supplied in an artificial form.—WILLIAM RAITT.

### CHAFF COVERS.

FROST has now given us a decided grip, and but little supplementary work can be done in the way of defending bees from its rigour. If winter passages have not been made our stocks must take their chance without them. If our hives have not been contracted the poor bees must fight as best they can against the excessively chilling effect of an unnecessarily large number of combs and extent of hive wall, until some considerable rise in temperature makes it possible to remove the excess, putting in a dummy or false hive side and filling-in the spaces made with chaff, hay, fine shavings, sawdust, rags from the ragbag, cotton waste, cork dust, or some such non-conductor of heat. Of all these I prefer the first as most handy and economical, while for wintering even strong stocks would recommend not more than seven Woodbury frames or their equivalent. I have several lots far from weak to which only five frames are given. These, of course, need to be well stored with honey while the bees—filling fairly the whole space allowed them, and clustering safely even against the well-defended hive side—are snug and dry in every part. No combs are mildewed, and when spring with its strengthening sun again smiles upon us the removed combs can by degrees be added, to the immense advantage of the then strengthening colony.

But one method of increasing the protection of our stocks in frame hives the present cold will not prevent us from adopting. I allude to chaff covers. The greater number of bee-keepers are now using quilts over the tops of the frames; but if instead of the divided crown board, or even the now almost obsolete single crown board be retained, the chaff cover will be found equally valuable. It consists simply of a frame of thin wood nailed together like the four sides of a shallow box, about 8 inches deep and of the length and breadth of the hive or portion of the hive containing the bees. To the edges of this wood, so as to form the bottom of the box, is fixed with tacks a piece of cheese cloth sacking or felt (I usually use the scrim which has through service become untrustworthy for confining swarms), and then the cover is placed over the quilt or crown board as the case may be. It is now filled up with chaff, when, without impeding ventilation, it protects in a most effective manner from cold. The quilt in such weather as we are now experiencing will always feel very chilly to the hand; but if a chaff cover be used and it be lifted the quilt beneath will appear warm to the touch, a proof at once of the conserving power of the chaff. We shall appreciate the value of the chaff cover if we remember that it is above and at the upper part of the hive that protection is of most service—a fact forgotten apparently by some, since prize-winning hives in a few cases have here been the thinnest. Where it is adopted the bees will be found less impoverished in stores, stronger in numbers, and individually more vigorous in the spring than where excessive leaking away of temperature has been allowed.—F. CHESHIRE.

NEW HORIZONTAL OCTAGON HIVE.—Would "ALROFI" please to give the particulars he promised in his article, 12th of June, about Mr. Paterson's hive? Is it square or octagonal? If the latter, how does he get across to the frames? Does he use wax sheets? Is it 14 inches in length and breadth? How does he super it?—PRESTWICK.

### OUR LETTER BOX.

FOWLS DYING (F. A. B.).—Your fowls are dying of liver disease. It arises probably from feeding—for instance, the potato as the principal

article of food almost always causes it. Maize given in undue quantities will produce it. All the deviations from natural food have a tendency to cause disease. In poultry it is almost always the liver that is attacked. Feed them morning and evening on barleymeal or ground oats slaked with water. Give them at mid-day some maize or kitchen scraps. If they have no access to grass or green food supply them with sods of grass or lettuce or other green food; cabbage is the least useful of all vegetables for this purpose. In such cases as yours the diet of the birds should be mentioned when information is requested.

COCK'S COMB PECKED (M. B.).—So long as the bird is allowed to remain with the hens they will pick his comb, even until they pick a hole through it. They are tempted by the raw and bleeding wound, and the cock submits. Remove him, dress the wound with citron ointment; it will soon heal. He must not be put with the hens till it is quite healed. While the severe weather lasts he should be somewhat protected from it in a loose box, barn, or some such place.

MARKING POULTRY (N. E.).—Much depends on whether you wish to mark fowls in a manner known only to yourself, or so plainly as to make them distinguished easily when running in a yard for kitchen purposes. If the latter, there is no better plan than a ring of wire round the leg; and as it is no inconvenience to the wearer, different broods may be marked with one, two, and three rings. Another mode is by sewing cloth or list round the leg. Different colours denote different broods. Private marks may be made in the web of the wing; others cut out small notches in the beak and sometimes in the eyelid.

PROFITABLE POULTRY (Inquirer).—We shall shortly publish notes on this subject, (which you may read with advantage.

EGGS SMALL (F. D. S.).—The eggs that you regard as small are probably the result of the "mixture of breeds," especially as two out of three varieties of fowls you name do not lay eggs that are considered large. Spanish usually produce fine eggs. The food you give is right; give as much as the birds eat freely, but not more.

COMBS FALLING (Reader).—Hives without cross sticks are easily injured in moving them, and very often the combs fall and smother the bees. No one without seeing the skep can advise you what course to pursue. If the breakage is not serious it will perhaps not be advisable to do more than remove any shattered fragments; if the injury is great we fear you can do but little to rectify it. You must rely on your own judgment and ingenuity in finding the best remedy under the circumstances.

### METHEOLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.						IN THE DAY.					Rain.
	Barom-eter at Sea and Sea Level	Hygrome-ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem-perature.		Radiation Temperature.				
		Dry.	Wet.			Max.	Min.	In sun.	On grass.			
We. 21	Inches.	deg.	deg.	N.	deg.	deg.	deg.	deg.	deg.	In.		
Th. 22	30.190	33.4	31.0	N.	37.9	37.0	31.7	42.9	27.2	—		
Fri. 23	30.092	31.0	31.0	N.	37.2	39.0	29.9	31.1	24.4	—		
Sat. 24	30.108	32.0	32.0	N.E.	37.0	41.4	30.2	33.7	23.6	—		
Sun. 25	29.990	34.6	34.0	N.	37.0	39.2	31.5	31.6	23.0	—		
Mo. 1	29.840	27.3	21.9	N.W.	36.6	34.3	26.3	28.4	22.2	—		
Tu. 2	29.701	27.0	26.5	N.W.	35.8	33.4	24.6	45.5	20.3	—		
Wed. 3	29.946	25.0	25.0	S.	35.3	31.6	17.7	52.9	13.2	—		
Means.	29.977	30.2	29.3		36.7	36.6	27.5	39.2	22.5	—		

### REMARKS.

26th.—Slight snow all the morning, melting as it fell; dull afternoon; slight snow again in evening; moonlight night.  
27th.—Very clear bright frosty morning, sunshine until 2 P.M.; fair but overcast afternoon; fine evening.  
28th.—Fine bright day, clear moonlight evening.  
29th.—Cold, rather dull day, but fair throughout.  
30th.—Keen frost, but very fine bright day; brilliant evening.  
December 1st.—Very cold but not so bright; little snow about noon, and also at 9 P.M., but not a measurable quantity; nearly cloudless afterwards.  
2nd.—Keen frost, but calm bright day; very cold evening with slight fog. Severe frost throughout the week.—G. J. SYMONS.

### COVENT GARDEN MARKET.—DECEMBER 3.

TRADE generally remains quiet, and there is no material alteration in prices from last week's quotations, yet some vegetables are a trifle dearer.

### VEGETABLES.

		s. d.	a. d.			s. d.	a. d.
Artichokes.....	dozen	0	0	Mushrooms....	pottle	1	6 to 3 0
Asparagus.....	bundle	0	0	Mustard & Cress punnet	0	2	0 0
Beans, Kidney.....	1 sieve	0	0	Onions.....	bushel	2	6 4 0
Beet, Red.....	dozen	1	0	Pickling.....	quart	0	4 0 0
Broccoli.....	bundle	0	9	Parsley.....	doz. bunches	2	6 8 0
Bru-seis Sprouts.....	1 sieve	3	0	Parsnips.....	dozen	0	0 0 0
Cabbage.....	dozen	1	0	Pears.....	quart	0	0 0 0
Carrots.....	bunch	0	4	Potatoes.....	bushel	3	6 4 0
Capicums.....	1/2 100	1	6	Kidney.....	bushel	4	0 0 0
Cauliflowers.....	dozen	3	0	Radishes.....	doz. bunches	0	0 0 0
Celery.....	bundle	1	6	Rhubarb.....	bundle	0	0 0 0
Coleworts.....	doz. bunches	2	0	Salsafy.....	bundle	0	9 1 6
Cucumbers.....	each	0	4	Scorzonera.....	bundle	1	0 0 0
Endive.....	dozen	1	0	Seakale.....	basket	2	0 0 0
Fennel.....	bunch	0	2	Shallots.....	1/2 lb	0	3 0 0
Garlic.....	1/2 lb	0	0	Spinach.....	bushel	2	6 4 0
Herbs.....	bunch	0	2	Turnips.....	bunch	0	6 0 0
Leeks.....	bunch	0	2	Vegetable Marrows	each	0	0 0 0

## WEEKLY CALENDAR.

Day of Month	Day of Week	DECEMBER 11—17, 1879.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.							
11	TH	Royal Society 8.30 P.M.	46.5	32.6	39.5	7 58	3 49	5 36	1 48	27	6 38	345
12	F	Quekett Club at 8 P.M.	48.0	37.0	42.5	7 59	3 49	7 2	2 34	28	6 10	346
13	S	Royal Botanic Society at 8.45 P.M.	47.6	36.5	42.0	8 0	3 49	8 16	3 37	●	5 42	347
14	SUN	3 SUNDAY IN ADVENT.	46.9	34.3	40.6	8 1	3 49	9 13	4 53	1	5 13	348
15	M		47.0	33.6	40.3	8 2	3 49	9 54	6 10	2	4 44	349
16	TU	Royal Horticultural Society—Fruit and Floral Com.	46.5	32.9	39.7	8 3	3 49	10 24	7 44	3	4 16	350
17	W	Society of Arts, 8 P.M. [mittess at 11 A.M.]	45.9	34.0	39.9	8 4	3 49	10 46	9 5	4	3 46	351

From observations taken near London during forty-three years, the average day temperature of the week is 46.9°; and its night temperature 34.4°.

## WOODLAND RIDES.

**I** REALLY must write something for the Journal," I said one morning to the partner of my sorrows: "but what to write about I do not know." "Oh, there is plenty to write about. Set to work." "What?" I asked. "Well, there is the Rose." "Every conceivable subject bearing upon the Rose has been written upon *usque ad nauseam*—exhausted, in fact." "Well, there is the Gladioli. You have grown some beauties; even now at the end of November they are grand." "But I have already written all I know about them." "Oh, then (with triumphant voice), there are the woods! write about your improvements in the woods." So I am fain to ask you, Messrs. Editors, to accept the following as an apology for an article, and if you blame me—well; perhaps you, too, are married. I say no more.

At a time like this, when there are so few flowers, and those that still remain with us are so dull and uninteresting; when the leaves are falling all over the lawn, when all around are signs of decay and death, when "chill and dim falls on the moor the brief November day;"—at such a season as this it is exceedingly pleasant to have a walk along the well-kept rides of a wood.

I have for the last two years been making improvements in a very large wood near here, and with the consent of the owner been making new rides, and I have derived more pleasure from doing this than spending money on Roses that will not grow, or fighting with the miserably poor soil that abounds in this neighbourhood. "A congenial and an appropriate occupation," some of your readers may say; "for where better can a Wyld Savage be than among his native wilds?" This may be so, and I do not deny that it is, but at the same time I think that men who are not savages may derive a great deal of gratification from walks and rambles in large woods even in the winter time. Winter has its advantages here, too, as elsewhere. There are no snakes, and those venomous reptiles, adders or vipers, which abound here have retired into winter quarters. It is dangerous to allow young children to walk in the spring and summer in the woods or scramble up the banks where those adders are.

Here in this hilly country the vistas and views to be seen in the woods are so numerous and so diversified that lovers of Nature are delighted to see them; and I only wish I had the privilege of showing some artist a few of the views. The great drawback to a ramble in the woods is the wet. Most woods hereabout are full of springs, and as no landlord thinks it worth while draining them, the rides are nothing but swamps. The sportsmen, on the solitary occasion during the year that they visit the woods, are prepared for any amount of swamps, and dress accordingly; but for ladies or children, or even for men to walk therein, it is exceedingly unpleasant. The first thing, then, is to drain them. At first I tried what might be called spot draining—that is, making a short spur from the spring to the other side of the bank, but I found that after every storm the

water from the higher ground used to filter through on to my rides, and so I was compelled to change my tactics. I now make a long open drain the whole length of the ride the side nearest the bank, and the water which before was a great nuisance now becomes an object of beauty. For, as in some fertile soils, we are told that you need only tickle the earth with a rake ere it laughs and sings—that is, bears corn, so here wherever you dig out a trench or a drain up there springs almost by magic every kind of Moss and Fern and Lichen, so that as you walk along the rides you see the water dancing in the fitful sunlight, and the Ferns gleaming with the dewdrops. To keep a ride in good order it is necessary for the sun and the wind to be able to enter in on one side: and here there is a difficulty, for most rides are lined with Holly, Firs, and Birch, and the majority of landowners have an insuperable objection to any of these trees being cut or pruned, so that the sun can only struggle in a few places, and the surface of the ride is always more or less wet except in the very driest weather.

The perfection of a ride is one where the foliage is dense on the north or east side, but open to the sun on the south or west. You then look down, when the wood is hilly, upon the trees lying at your feet and on those at the other side. Our wood is in the form of an immense horseshoe, the outer rings of the shoe all being on high ground. The rides are on each side of the rings and one through the middle, which is the worst to drain. But when the water is taken off the rides it soaks away in the porous soil and is no more seen for a time; but like the subterranean Nile, as soon as we cut a new ride we find water bubbling up from the ground, and we know that the water of our rides has found an outlet at last. The water then gradually reaches the bottom of the wood, where it forms a small stream, which is one of the sources of the river that runs into the sea at Charnmouth. And here the lover of woodland walks can make a very pretty use of it; for with a very little trouble and expense he can make a small pond or miniature lake, in which he may grow Water Lilies, Water Hawthorns, and other aquatics. I am told that Mr. G. F. Wilson has devoted a large wood to the cultivation of his favourite flower the Lily. I wonder if his neighbours think him as mad as my parishioners think me—all, that is, except the man who is employed therein. I can sympathise very warmly with Mr. Wilson, and hope he will do the same for one is always glad of a sympathising friend. But I doubt where in a modern garden more lovely spots can be pointed out than in some woods. I could show you a place here where there is a sort of ravine for about 30 or 40 yards amid which all sorts of Ferns are luxuriating, and this ravine is hemmed in by Hollies and other bushy trees, forming the most sheltered spot imaginable. Then, again, a wood like ours, at least is such a sheltered spot, you may go out on a cold day with the north wind almost blowing your ears off, and as soon as you get into the wood you do not feel it; you appear to be in another climate. As my old woodman says, "It seems somehow to blow over the wood and not reach you." Then there are the glorious tints at all times of the year to delight the eye, which I fancy I hear some one say as they read this, "At all times of the year! Are



there any tints in winter?" "Yes," I reply, "most decidedly." the Birch trees have a tint or shade of colour in their bark and in their branches which quite gives a silvery gleam to the landscape in the winter. Then there are the common Hollies with their very dark green foliage, and with their charming scarlet berries; and the Hazels, which have a tint quite peculiar to themselves; and the Oaks with their stalwart limbs encased in Ivy. There are many and varied tints even in winter. And then how delightful to walk in the woods and to notice the first, the very earliest, signs of the awakening of Nature from her long winter slumber which are to be seen in the woods!

Long before the garden shows signs of spring the woods do; not perhaps apparent to every careless eye, but the earnest lover of Nature notices signs that tell him the tide has turned, the long lane is nearly ended now, and soon we shall have spring. Then the lover of natural history will find the woods an endless source of delight. How Thomas Edwards, the great naturalist and shoemaker of Banff, would rejoice in such a wood as ours! Stay here a moment behind this tree as the evening is drawing nigh, and the rabbits will one by one steal out of their thick cover and begin to play with one another like a lot of children over the nursery fire, while overhead the wood pigeons will coo away for a time one of the softest and most musical songs that I ever heard. But, alas it should be so! After a time two will begin to fight, and don't they just go it when they begin! and whilst you move to look at them the very least sound made will set the whole flock of these extremely shy birds in motion, and with loud flapping of wings and with a noise like a whirlwind they will scurry away to a distant part. Then as you walk on you hear the strange sad cry of a rabbit in pain. You go quickly and quietly on, and there you see a poor bunny in frenzied agony running round in a hopeless attempt to get away from a skunk or a weasel. Then overhead, jumping lightly from tree to tree as cleverly and lightly as a flyfisher whips a stream, comes a nimble squirrel with its chestnut brush and bright eyes looking for acorns or nuts. It is a most interesting sight to watch how cleverly he moves along the branches. He will bear his weight to the very last inch before he makes his spring. There is a tradition here that about fifty years ago a squirrel could go from here to Chard, a distance of ten miles, without touching the ground.

Next it is so easy to improve the rides at very slight expense by planting at the margins robust or free-growing plants. There are numbers of herbaceous plants that grow and spread so rapidly that they soon take up far more room than we can afford to give them. Herbaceous Asters or Michaelmas Daisies, for instance, soon spread over much ground, and Potentillas when once established spread exactly like Strawberry plants. Fuchsias here, too, grow into huge bushes—almost, indeed, attain to the proportions of trees: what is easier, then, than to transplant some of these to the woodland rides? Old and exhausted bulbs, too, may be planted here, although the field mice make great havoc among such as the Crocus and Scilla; and above all other plants or trees the Rhododendron, the most charming shrub, may well find a home in our woods. In fact it is more suitable for woods than any other place. It makes a beautiful cover for game; usually rabbits will not attack it, and the flowers in spring and early summer make the most delightful prospect.

Then if expense need not be considered, or a certain sum is devoted yearly to the improvement of the woodland rides, what a splendid pinetum could be formed in some open space! I hope in future years, if I stay here, to make what I shall call a Cedar ride—for of course all the rides are named—which shall consist of a ride bordered by all the best Pines and Conifers. When that is done and a few years have elapsed I fancy my successor, or even perhaps the noble owner, will bless the name of—WYLD SAVAGE.

### THE ROOT-PRUNING OF FRUIT TREES.

Of all operations connected with fruit culture that of root-pruning is perhaps the most important, although there are few places where it receives anything like the attention or skill that is generally brought to bear on other branches of gardening. This work should be scientifically and carefully conducted, but instead of that it is frequently entrusted to rough inexperienced hands, whose knowledge of the purposes of the different kinds of roots and the functions they serve are of the most imperfect character. Such men as these cut away with

spade right and left all that comes in the way, and at equal lengths big or little feeders; therefore it is not surprising that results have been anything but satisfactory to those who have had the work carried out in the manner described.

After close observation we have found that where a coarse strong shoot is produced in a tree there will be found a gross fibreless kind of root, either as a tap going straight down, drawing the supply of sap from cold wet soil or other source where the conditions are not favourable; therefore, if we wish to restore an equilibrium of growth and bring about fertility the right way is to assail all such roots wherever they may be situated and shorten them back considerably, in order to force them to throw out a network of small fibres to feed nearer the surface. In wet stiff land even a disturbance of the soil often effects much good, especially if a few barrowloads are taken out and replaced with some fresh turfy loam and road scrapings; indeed, in all cases of root-pruning this is advisable, as it is astonishing what a little assistance given in this way works in bringing them round to more fruitful habits.

The difficulty, however, with some growers is not how to check these trees from making coarse strong shoots, but on the other hand, how to get sufficient growth and strength to enable the trees to carry good crops of fruit, and particularly so is this the case with Pears on the Quince stock trained as pyramids, which in light dry soils nearly always present a starved appearance, and seldom ripen fruit fit for eating. Although the Quince is a moisture-loving tree we not unfrequently see Pears worked on it planted on raised mounds, which, unless on very heavy retentive lands, is the worst practice possible. Better far, instead of doing this, is to allow the collars of the trees to be even slightly lower than the general ground level, that water or sewage can be easily administered during dry weather without loss.

On light dry lands the Pears are often checked from want of moisture just at the time they ought to be swelling freely, and the skin in consequence becomes contracted, and the flesh hard and gritty, so when rain comes the greater portion of the fruits crack and are of no further use; a few of ours used to be in this unsatisfactory condition, but since we have added a quantity of clay to the soil they bear abundantly, and are in quality everything we can desire. Those, therefore, who are troubled in the same way cannot do better if they have light land to deal with than to set to work and improve it in the same manner; although it entails considerable labour, it amply repays it in a few years. The way we managed so as to raise the general level was to wheel out as work progressed about 8 or 10 inches of the sandy subsoil, and in trenching the same quantity of clay was brought back to replace it, and trenched in 2 feet from the surface, where the principal roots are buried; in this way it parts with its moisture slowly, and always contains a good supply for the tree to feed on. In trenching the trees were not unduly disturbed, but allowed to stand on a solid base of earth about a yard through, thus preventing them from receiving a severe check.—JOHN LLOYD JONES.

### ISOLEPIS GRACILIS.

I WISH to make an appeal on behalf of this well-known decorative plant. When I first made its acquaintance it was as a stove plant, but some years ago I tried it in the conservatory with good results. After coming here I raised a stock of plants from seed, and now employ it regularly as an edging to the other plants on the side stages of the conservatory. The plants are grown in 3-inch pots in good rich soil, and supplied constantly with liquid manure. This is necessary in order to keep the plants growing freely and the foliage of a healthy green colour. Sometimes we place the pots in small saucers full of water. This is particularly necessary when the plants are used for furnishing tables in rooms, as they become dried up very quickly in such positions, a certain result being yellow foliage in a few days. In spring the stock is divided into small pieces and potted. Placed in a vinery for a few weeks they soon become established. They are then repotted in 3-inch pots as at first mentioned, and when of a size to be of value in a decorative sense are placed round the stages of the conservatory. When well grown the Isolepis is equal to any other green-foliaged plant in cultivation.

In making the arrangements for the planting of the flower garden last year it was placed in a prominent position as a dividing line. What may be of interest to many is that these plants are still alive, notwithstanding the continued frosts we have experienced. In Paxton's "Botanical Dictionary" there

is an *Isolepis nodosa* from New Holland with "*gracilis*" as a synonym, also an *I. gracilis* without references. Which is the one under discussion, and where was the latter imported from?—R. P. BROTHERSTON.

### PEACHES ON OPEN WALLS.

PROBABLY some of those who aspire to the cultivation of Peaches on open walls would feel somewhat discouraged on reading the remarks of "ESSEX" on page 401 of the Journal. Your correspondent infers that further north than London securing crops of Peaches on walls is a matter of chance; and that the expense incurred by keeping the trees clean would go far towards covering them with glass, when it is presumed they would not afterwards be infested with aphides or other pests. It has been my experience to note that plants subject to aphides and other insects are much more infested when coddled under glass than in the open air.

Although I have to contend with the cold climate of Roxburghshire, as far north as the Tweed, yet I have had good crops of Peaches on walls during the last ten seasons, and the trees now promise well for future bearing. My wall is 14 feet high, 130 feet of the southern aspect being covered with Peach trees, the other portion being devoted to Apricots; and although I lost many valuable shrubs and ornamental trees last winter, only a few small dead branches here and there on the Peach trees indicated the severe frost to which they were exposed. The Royal George and Noblesse are the two varieties which succeed best with me. In spring, after being pruned they are syringed several times with black soap and flowers of sulphur diluted in hot water. This destroys the eggs of green fly, &c., located in the bark, and especially in the nail holes and crevices of the wall. A dressing at this period tends to keep the trees clean all the season; it is of little use syringing when the leaves are all curled up and unsightly. This must be prevented, and success will be the result.

Eventually the critical time arrives when the blossoms must be protected, to save which many methods have been devised. Some approve of permanent glass copings, which, I think, often keep the soil too dry at the base of the wall where many of the roots are; others approve of spruce branches stuck in. The latter method of protection I have practised, likewise hexagon netting; both, however, with indifferent success. About ten years ago I gave Frigi Domo a trial, and found it proof against all spring frosts, and shall continue using it until a better canvas be produced. I fasten it to a round piece of wood along the face of the coping, and keep it free from the trees by means of stakes placed 3 feet apart, the upper ends beneath and pressing firmly against the coping, while the under ends are let into the ground. This screen is drawn up every morning, except when stormy, and drawn down every night, and fastened at the bottom by means of pegs pushed into the ground. This secures me a crop with certainty every season.—ROXBURGHSHIRE GARDENER.

### WINTER FLOWERS.

WE seem to have plunged suddenly into the very depth of a bitterly cold winter. The cold to-day is quite equal to anything we had last winter, and we are only at the beginning of December. It is bleak and dreary outside in the garden, but within the vinery so bright and cheery and warm that it is like stepping suddenly from winter into summer; a delicious fragrance, too, fills the air, for there is a row of Roman Hyacinths in full flower. Those plants which give us flowers in November and December are especially precious. Chrysanthemums are our chief resource, and I have been more than ever pleased this year with some noble specimens of *Elaine*, James Salter, and Fair Maid of Guernsey; but to make a house of any size look gay you must have small as well as large plants, and except under very careful treatment Chrysanthemums are apt to become "leggy."

I know of no plant so pure and sweet as the Roman Hyacinth, unless it be another bulb, the Paper White Narcissus. But this latter is not nearly so free-flowering as the Hyacinth. Out of a hundred of the Roman Hyacinths I have only one which is doubtful about not flowering, and nearly all send up two spikes; but out of a dozen of the Narcissus more than half will fail. This is provoking. I should be glad to know whether others experience the same thing. I cannot think that it is the treatment, as they have been brought on care-

fully—first of all in a warm dark cellar, and then, when the pots were full of roots, in a greenhouse, where the forcing was very gentle. I have given them saucers since they have come to the upper air, but all is no good, and my experience this year only confirms what I have had to put up with in former years; so much so that I have sometimes said to myself, "I will buy no more Narcissus," but the thought of the exquisite scent and the long duration of the flower has after all induced me to change my mind. The double Roman Narcissus has behaved unusually well with me this year in the matter of flowering. Nearly every bulb is throwing up a spike. It has had exactly the same treatment as the Paper White, but is some weeks in advance of it. The fragrance is delicious, but the flower itself, like a great many other double flowers, is wanting in grace and beauty. If you wish to secure an abundance of sweet white flowers in November and December obtain the Roman Hyacinth. If you have a good temper and can stand disappointment for the sake of an exquisite fragrance which will last a long time have the Double Roman, or the Paper White Narcissus.

I have never succeeded so well with the *Richardia* as this year. I attribute it partly to the wet summer, for one of the difficulties I meet with in the factotum who manages my garden is to get him to water it enough in the summer. The plants of *Richardia* were planted out in the kitchen garden, and then produced so many of their large white spathes that I half sighed as I gathered them to think that in the winter they would be exhausted, and we should have no more; but it has not been so. They have been ranged in large pots on a back shelf in the vinery, and there they have continued producing their spathes, and I feel confident I shall have plenty for Christmas church decoration. In the controversy, therefore, about what is the best to do with your *Richardias* in summer, I decidedly give my vote in favour of the planting-out, but I fancy in most seasons a trench would be of great service in keeping sufficient water about the roots; moreover, I do not think that the situation should be a warm one, but only half exposed to the sun. One very great advantage of the *Richardia* is that the spathes last so long in the room. In these days of room decoration, when large stately growing plants are so useful for that purpose, few are more welcome than the *Richardia*. At this time of the year to have the dark glossy leaves and tongue-shaped spathes ornamenting some bright corner in the drawing-room is indeed gratifying.

Double Primulas are also early winter flowers almost invaluable. The double fringed are nearly as pretty as single flowers, with the great advantage of standing so well after being cut. The old Double White seems to be more floriferous than the large and beautifully fringed specimens of more recent days. But the latter make up for quantity by the richness and fulness of a single truss. I find that they like deep potting, and that they are less likely to damp-off when so treated than when the rootstock is above ground, and the plant consequently unsteady. With a very little care they can be made to flower during the whole winter. Two words, I should say, give the chief requisites for successful cultivation—viz., warmth and air. Cyclamens require much less of the latter; in fact, I never succeeded so well with any as with some which I shut up in a cold frame in early spring and kept close during the hottest days of April. They came on quickly and flowered, as Cyclamens will flower when well treated, till they became a mass of starry blossoms. But they are sulky, and the special aversion of my factotum, who declares he can make nothing of them. He begged me to buy a packet of seed a few years ago, because he thought he could do better with younger corms. But it was only the same thing again. I have taken them in hand myself now, and I hope to have Cyclamens again this winter. I am sure that one great secret is to give them proper treatment in summer, and I believe that treatment is to plant them out in a sunny position and to give abundance of water.

I must not forget to mention as a first-rate plant for this season *Abutilon Boule de Neige*. It flowers freely, is easily grown, and has good foliage. The only quality about it at all objectionable is that it does not seem to like a visit to the drawing-room. It is essentially a conservatory plant. Perhaps some would find fault with it for not having any scent; but the globe-shaped bells are lovely enough to do without that. Give this *Abutilon* plenty of water and good heat and you will have abundance of flowers. A few days ago the border between the white cloth outside and the satin centre of a large dinner table was composed of flowers of *Luculia gratissima*. This made

a lovely border, and the scent was quite delicious. It is an old-fashioned plant, but that only makes it the more valuable.—A GLOUCESTERSHIRE PARSON.

### SLUGS AND SNAILS—HOW TO DESTROY THEM.

A FEW months ago I started the above inquiry, and having tried all the various means recommended in your Journal, I have come to the conclusion that common salt properly applied is not only the cheapest but most efficacious remedy against the slugs and snails, and at the same time beneficial to the crops. I pay 1s. 6d. per cwt. including delivery for dirty common salt; it can be bought for £1 per ton for a railway truckload. I had it sprinkled over the surface of my garden like a shower of hail. The result was that next morning hundreds, or rather thousands, of snails and slugs were lying dead. The dressing was repeated the first moist day about a fortnight after, and again after an interval as soon as the enemy showed in force. I have also had my manure heaps dressed liberally with the salt, for, as my man-of-all-work says, "the slugs can't get through it as they did that nitrate," alluding to the fact that the big white and also black slugs on being dusted with nitrate appeared to throw off a slimy overcoat and to glide away unhurt if a second dusting of nitrate was not promptly administered; whereas the common salt appears to adhere and ultimately to kill them—as my man says, "they cannot get through it. Of course the salt, like many other good things, must be used, not abused, or damage will be done to tender plants.—G. O. S.

### OUR CHRISTMAS VEGETABLES.

CONSIDERING the severe winter we had last year, followed by the backward spring, ungenial summer, and early and severe winter of this year, I fear that with many an abundance of superior vegetables will not be easily secured. Outside vegetables are far from being so hardy or well developed as they were last season at this time, and should the weather continue as frosty and cold as it is at present vegetables will be far more scarce in the spring of 1880 than they were in 1879. Does someone say, "Well, this must be the fault of our gardener?" Decidedly not; weather influences, especially on outside crops, cannot be effectually avoided. The supply of vegetables in winter or spring can, however, be increased by forcing. In some gardens with abundance of heated glass houses, pits, and frames many vegetables may be had, certainly not without expense, but with little trouble or skill.

In the first place no garden of any pretensions should be without a good supply of stored Carrots, Beet, Parsnips, Salsafy, Onions, Turnips, and other roots for winter use. These all may be and should be grown in summer and autumn and stored away ready for use, and their supply should cause no gardener anxiety at Christmas. We next come to the green crops. In the open air Brussels Sprouts must always be regarded as one of our most valuable vegetables at Christmas. It bears severe weather better than any other, and the sprouts can always be used whether they are large or small.

Broccoli cannot be so favourably spoken of, as it is so much influenced by the weather. Plants which might give promise in October of being ready for use at Christmas may not come in until February. No variety that I am acquainted with will make much progress during severe frost or snow, and those which may be forming heads, say about the beginning of December, may be injured before Christmas unless they are carefully protected. It is in this respect they differ so much from Brussels Sprouts. Our Broccoli for use this year at Christmas consists only of one variety—viz., Veitch's Autumn Protecting. Many of the plants were forming heads rapidly during the latter part of November; some of these have had all the leaves tied over them, others are cut and stored, so that altogether we are fairly well off for Broccoli.

Savoy's are plentiful, and so are Cabbage sprouts and Coleworts. Curried greens will not be touched until the weather has destroyed all else, and well-blanch'd Leeks may be used occasionally to save other vegetables. Last Christmas we had abundance of well-blanch'd Celery, but owing to its being so highly earthed up much of it decayed shortly after that time. Now we have plenty of it, but not so much earthed, and we hope to find the benefit of this in spring. Lettuce are best under frames. Radishes are sown in boxes placed in vineries; Mustard and Cress is treated in the same way.

Tomatoes were not a profitable crop out of doors this season;

we did not gather a ripe fruit from one of our outside plants. Our Christmas Tomatoes are those gathered green from plants out of doors and hung up in bunches in a Pine house to ripen. They would ripen equally well in a room; and those with no glass houses, but who like Tomatoes, might grow their plants and green fruit against any open wall in summer, and have them ripe in their rooms by Christmas. Unless with those persons very advantageously situated French Beans cannot be had in large quantities at Christmas. We generally gather a few until that time from plants in pots or boxes. Damp and a low temperature are very injurious to them when they are in bloom.

Asparagus is one of our favourite Christmas vegetables, and this season we have it both green and white. For flavour the first must be given the preference, but for tenderness the latter is liked most. The green is being cut from a bed in a Cucumber pit where a bottom heat of from 40° by night to 60° by day is maintained. The white or blanch'd form is growing in the Mushroom house where the atmospheric temperature is always about 55°, and bottom heat is supplied from a mixture of dung and leaves. In this way I am sure Asparagus might be had anywhere by Christmas in a cellar. Roots from four to twelve years old are not difficult to start into growth. In the same house Mushrooms are pushing up thickly from beds composed chiefly of leaves, and those who think they cannot have Mushrooms at Christmas without horse droppings might try a bed made up about the end of next October with any kind of leaves, and a sprinkling of littery horse or cow dung to raise a heat.

Seakale and Rhubarb treated the same as the white Asparagus are soft and tender, and both are most useful when either fruit or vegetables are scarce. Herbs dried and forced, besides Parsley, which is always in demand, are easily secured, and the supply from the kitchen garden at Christmas cannot be complete without them.—A KITCHEN GARDENER.

### GRAPES RIPENED WITHOUT FIRE HEAT.

A FRIEND of mine, a retired brother of the craft, has built three vineries in Devonshire to keep himself engaged, and also hoping they would turn out to be profitable. The first house was built three years ago this autumn, the Vines planted at once; since then they have done well. The varieties planted were Black Hamburg, Black Alicante, Gros Colman, Lady Downe's, Madresfield Court, and Waltham Cross. The Black Hamburgs bore twelve bunches each, well coloured, and about four on each Vine weighed 3 lbs. each, the others from 1 to 2½ lbs. The Gros Colman averaged ten bunches each, the largest weighing 3½ lbs., the others in proportion, the berries being good and well coloured. The Lady Downe's Vine bore eighteen bunches averaging 1 lb. each, well coloured, berries very fine. Madresfield Court, fine large bunches, well coloured, but every berry cracked. Waltham Cross did not set a single berry, was therefore of no use. The Black Alicante did not set well, but the bunches were large and well coloured. Commenced to cut the Hamburgs the 1st of September, finished cutting the Gros Colman the first week in November. This house has had no heat since it was erected, nor is there provision made for any. The other two houses are just finished. They are span-roofs, the other a wide lean-to.—EROMEGNAL.

### SEED POTATOES.

SEEING so many "cautions" in the papers about seed of the Magnum Bonum and Champion Potatoes I beg, for the good of that section of the public who have not had experience on the subject, to offer a "few" suggestions. Each year now it is quietly suggested by a caution that the public are only safe in obtaining their seed of some particular merchant in the trade, who each year gives out that he and his firm bought the whole of the crop of Mr. So-and-so's Potato. The unthinking public swallow this, to my mind, very tasteless bait, forgetting that if a good Potato is really well and honestly proved to be a resister against the disease in one season it will have become the property of a very large number of the community, and that the seed can be had quite true, pure, and good from any one of the growers who annually sell in their districts. If a man is ignorant of the varieties of Potatoes and has not the chances I name near home he must go, of course, to one of the respectable large firms. I maintain the prices given last year, for Magnum Bonum Potatoes were needlessly high from the large quantity that were in England; and though they and the Champion are now so plentifully grown and have succeeded

so well in most places, it is evidently sought to make it be believed that seed of these two varieties will be both scarce and dear. I purchased some seed of *Magnum Bonum* last year from two of the great firms, also some from a third party. To prove my assertion I will place six Potatoes from each lot, and challenge the most experienced of the three vendors they came from to pick out their respective lots. All were grown on the same ground, all perfectly free from disease—not one bad tuber in an immense crop. I am a buyer again this year to send to my tenants in Ireland, but I know numbers of people in England and Scotland who can produce quite as true and good seed as need be planted.

I take it in this particular case it is the duty of all persons to try and scatter widely in these depressed times a Potato that has proved to be disease-resisting, not to try and keep up the price and prevent those from obtaining it who cannot afford fancy prices. In this particular season, and after such a bad time for agriculturists and horticulturists, I say the man who will sell any good seed at a fair price ought to be dealt with. I write this partly hoping it will induce persons having more seed of *Magnum Bonum*, *Champion*, and *Alpha* Potatoes than they require to advertise them. They need not fear but they will get a ready sale at remunerative prices, and lend a hand to assist the small holders of land, cottagers, small Irish and Scotch tenant farmers, and labourers who require a change of Potato seed more than most large occupiers of any rank. These are exceptionable times and have been very bad during the last two years, and I think all should lend a helping hand to prevent further distress to thousands of struggling cultivators.—A LARGE POTATO GROWER SINCE 1846.

[We learn that Messrs. Sutton & Sons of Reading, and Messrs. Carter & Co. of High Holborn, London, have granted, free of charge, to the "*Irish Farmers' Gazette* fund" Potatoes of the Scotch *Champion* and *Magnum Bonum* varieties, amounting in the aggregate to upwards of six tons, for free distribution. These firms are also supplying those varieties at reduced rates when purchased in large quantities by landlords for sending to their tenants in Ireland.—Eds.]

#### THE DUNMORE PEAR.

SOME time since I bought a piece of ground on which a gardener, now deceased but once well known in this neighbourhood, had planted a Dunmore Pear tree. It is now a lofty large-grown standard, and every year produces a crop of dark brown full-sized fruits. This year the crop has not only been large in quantity but also excellent in quality; so excellent, indeed, that out of a large selection my household unhesitatingly give the palm to Dunmore. Some, indeed, of my friends declare that they have never tasted Pears equally good.

My friend Mr. Tranter, the gardener to the Hon. Granville D. Ryder, at Westbrook Hey, near Hemel Hempstead, who cultivates more than fifty varieties, endorses my opinion of this Pear, and tells me that it used to be a great favourite in Scotland. The Pear, perhaps, is named from a village on the Firth of Forth, close to which is Dunmore Park, the seat of the Earl of Dunmore. In spite of its excellencies the tree is evidently not much known. I cannot find its name in Messrs. Veitch's catalogue, though almost every new variety of Pear is mentioned there. In Messrs. Lane's list it is described as a good bearer as a standard, fine, melting, a table Pear, first-rate in quality and size. With me it usually ripens in October and November.—E. BARTRUM, *Berkhampstead, Herts.*

[The Dunmore Pear was one of Mr. T. A. Knight's seedlings, and was named after Dunmore in Stirlingshire.—Eds.]

#### HEATING BY PARAFFIN STOVES.

I AM of opinion that paraffin stoves, if rightly made and properly managed, are capable of preserving bedding plants from frost. When these stoves are employed it is not because they are selected as the best of heating mediums, but rather as the only stoves that can be obtained by small owners yet great lovers of plants. Such possessors of miniature greenhouses are in this position—without some artificial heat their plants will inevitably be killed, but with the aid of the stoves a portion may be kept alive. The stoves, then, are not selected because of their intrinsic superiority as generators of healthy heat, but are rather adopted on the principle that when two evils exist it is prudent to choose the least.

I have stated that paraffin stoves are capable of excluding frost from structures containing bedding plants, this being the

object that perhaps nine-tenths of those who employ them have in view. The most important of bedding plants are Geraniums, and these probably constitute 90 per cent. of the plants that amateurs desire to preserve. Geraniums, then, I do not hesitate saying, may be kept alive and in a fair degree healthy by the aid of the stoves in question. My authority for saying this is that I have during previous winters successfully preserved my little stock of those plants by the aid of a paraffin stove.

If I am asked for the very best mode of managing bedding Geraniums in the winter my reply is—Have strong sturdy plants in single pots, thinly placed in a light position, and kept in a steady growing state in a temperature of from 40° to 45°. That, however, is a practice that can only be indulged in by the few who have houses or pits of the most approved construction heated by hot water.

In the case of the many whose only means of excluding frost from their Geraniums is by the aid of paraffin stoves, a totally different system of practice than that alluded to must be adopted. Instead of any attempt being made to produce a temperature sufficiently warm to keep the plants growing, the plants must be kept as much as possible in a state of rest, and should not be awakened from that rest by artificial heat. It is only by acting strictly on that principle that success can be expected. I cannot, perhaps, more usefully convey information on the subject in question than by describing the condition of my own plants and my mode of procedure in preserving them. Some of the plants are old, having been taken up from the beds and potted; others are young, the cuttings having been struck in September. Some of the plants had been cut down three weeks previously to being taken up, and were potted just as they were making fresh growth. These are very dwarf, and will make useful bushy "stuff" by next May. Others were not cut down, but were potted with their growths intact, except the removal of an occasional straggling shoot for symmetry's sake. But, although the plants were not pruned, all the leaves were removed at the time of potting except a few at the tips—small leaves not much larger than a shilling. Evaporation of the juices of the plants was thus arrested by the removal of the evaporating surfaces, and at the same time the stems were exposed to light and air and became firm and solidified. Until October the soil was kept moist to incite a little root-action, but on the approach of damp and cold weather the water supply was gradually diminished. The same general treatment was adopted in the case of the cuttings, now young plants; and the whole stock is hardy and healthy, but—and this is important—at rest.

In this state the plants will endure two or three degrees of frost without being injured, but if they had been kept growing half that amount of frost would ruin them. All that my plants require is to have the temperature a few degrees above the freezing point. I never light the lamp until the thermometer in my greenhouse stands at 35°, and then not for the purpose of raising the mercury but to prevent it falling below the point named. Were I to raise the temperature of the house 10° I should do more harm than good to the plants, besides wasting paraffin. That is where mistakes are made in stove-heating—firing to raise the heat instead of just to keep out frost. Last winter I preserved three hundred plants. I have other plants in my greenhouse besides Geraniums—Ferns and Heaths, the latter in flower; *Echeveria retusa*, also in flower; Palms and green *Dracenas*, and none of them have received any injury during the severe frost.

A word about the stove itself. It is one of Rippingill's, and has a large free burner, the flame being protected by a large open shield. This is important, and equally so that the perforated plate below the burner be kept clean, because then the requisite supply of oxygen is provided to secure a clear flame devoid of smell. With a contracted shield the flame, unless put "full on," which is seldom necessary for long together, is dull, and the effluvia therefrom is unpleasant and injurious. In a word, the lamp is used, not abused, and it answers its purpose well. Where injury results in heating by paraffin it is either the effect of attempting too much, or of bad paraffin. I only use the best.—S. W.

**THUNBERGIA HARRISII.**—Is not this the queen of stove climbers in winter, with its bold pendant clusters of pale blue Gloxinia-like flowers, which come in such abundance as to form "a cloud of bloom?" The foliage, too—long, elegant, and of a dark green hue—serves admirably to enhance the beauty of the flowers. Turned out of a pot in spring into a

couple of bushels of soil the plant grows with much rapidity the long rampant shoots quickly covering a large area of roof space, so that it becomes a prominent feature in a single season. Once established it only requires an occasional pruning to thin and remove old growth, as well as to keep it within bounds.—E. L. O.

#### HIGHLANDS, TICEHURST, THE RESIDENCE OF DR. NEWINGTON.

WHEN one goes from place to place where horticulture is supposed to flourish, whether it be Lord A, Sir John B, or simply Squire C, we are too apt to find ourselves falling into the same groove. There are grand parterres with flaming colours of bedding-out plants, rows of graperies and vineries, pits of Melons and Cucumbers—all, it may be, arranged on the most orthodox system, but with the orthodoxy very evident; no striking out into pastures fresh and fair, and all under the care of an experienced gardener, the master knowing nothing or next to nothing of his garden; like one with whom I went round his elaborate range of houses, the gardener wanting my opinion on an Orchid as to whether it was correctly named *tigrinum* or not, struck in with, "Is it any relation of the Tiger Lily?" But there are, on the other hand, places where Genius has made her mark, and of these Highlands is one. I spent a few pleasant hours there with its accomplished owner a little while ago, and wish I could convey to the readers of the Journal any correct idea of it; but I rather felt like the young American lady immortalised by Mr. Punch, who, declining one of the last dishes at an elaborate table d'hôte, said she felt "very considerably crowded." My mental digestion was as much suffering from repletion as that of a City alderman's bodily one would be after a Lord Mayor's feast, but, withal, I shall try to give some idea of some of the things I saw.

Highlands is situated about four miles from the Ticehurst Road and Wadhurst station of the South-Eastern line from Tunbridge Wells to Hastings, in the midst of that beautifully wooded part of Sussex stretching down towards Hailsham and Eastbourne. It is, as its name implies, on high ground in the midst of a property of some three hundred acres, and giving facilities by the character of the ground for all sorts of effects in landscape gardening. Here, for instance, we come upon a valley which reminds one of a French *plaisance*, with its sheet of water, rustic bridges, islands, rockery, and fountains, while all around Conifers and shrubs flourish in the rich strong loam which abounds here. I saw Conifers, such as *Abies Douglasii*, only eleven years planted, whose growth was something astonishing; and while mentioning these let me say that Dr. Newington's method of moving trees, even large ones, is a most ingenious and successful one. Three large and very strong three-pronged forks are driven into the ground round the tree that has to be moved, a strong leverage is then applied, and the trees are lifted bodily out of the ground with their roots and root fibres unhurt, are placed in a trolley or cart and taken to their destination, and are then placed in the hole which has been prepared for them. They feel the removal so little that a death rarely takes place, and I saw some Conifers which had been removed last year which had made longer shoots than those which had remained in the nursery.

The method of growing Grapes adopted by Dr. Newington has also in it much that would interest and perhaps surprise many Grape-growers. He adopts the rod system, but instead of cutting the shoot close back to the rod, and so leaving the one eye to break on which young shoot the bunch is to be produced, he leaves the shoots of the present year about 4 feet long and then fruits these. They will be cut away next year, and others will take their place. Thus he is enabled to choose the plumpest and best bud and the heaviest bunch, whereas on the ordinary system one must be content with the bud produced. Then I saw the Vine on which he had conducted those curious experiments of altering the character of the berries. He had inarched a Madresfield Court with a Black Hamburg, and had changed the berries to round instead of oblong; and by again inarching it with another variety, I believe Glendinning's Seedling, had brought it back to the oblong shape. Then there was the air-tight vinery, of which something has already been said in the Journal, and on which I can testify the canes were both large, ripe, and promising with their fruit buds. The Peaches here are grown in houses with a very high angle, which retains all the heat, and in which they ripen admirably. I had not time to see one at a little distance 130 feet long, which, however, I hope at some future time to do.

Has anyone ever seen a terrace greenhouse? I never had before, and was agreeably surprised to see one which the ingenuity of Dr. Newington has contrived. It is placed on the top of a ridge and running down each side. There are three or four terraces planted out with greenhouse plants of various kinds; creepers run up over the roof, even Vines are trained on it. It has a very singular appearance from the outside to see a greenhouse running up and down a hill, but the effect from the inside is very original and pleasing. There are few places where it could be attempted, and it would have entered into few minds.

Dr. Newington has been recently building a villa on a part of the estate, and has obtained the stone of which it is built close to the house. The quarry he is about to convert into a rock garden, and, knowing his ingenuity and taste, I have no doubt it will some of these days be a sight worth seeing. There is a large bold mass of rock in the centre, which would be admirably adapted for making an alpine height such as all visitors to York will remember in Mr. Backhouse's nursery. A stream of water will be brought down from the upper part of the ground to form a rivulet through it, along which aquatic plants would flourish. The entrances to it will be carefully concealed by Firs suitable to the locality, reminding the visitor of alpine scenes; while receptacles will be made all around of various sizes and forms, in which alpine plants will be placed, to form, I have no doubt, by-and-by a very attractive feature. In another part of the ground there was a sunken fernery where a large number both of species and varieties were evidently in a flourishing condition.

I should like to have been able to say more of this very remarkable place, but the time of year was unfavourable; and as on the morning I was there there were 18° of frost it was not a very propitious time for making observations. It has, however, whetted my appetite, and through the courteous kindness of its accomplished owner I hope at a more favourable season to spend a longer time there, and to give the readers of our Journal a fuller account of its contents.—D., Deal.

#### THE EFFECT OF FROST ON HARDY FRUIT TREES.

FROST having come in with such a lion-like grip, we are next season promised the opportunity of judging of its effects on fruit buds when in their dormant state. It is never a desirable occupation advancing any unfashionable theory, and the conclusion of gardeners generally as to the cause of the partial loss of last year's fruit crop proves that my arguments early last season were not fashionable, at any rate not convincing. My prediction was that we should have no Pears north of York. Perhaps I ought to have stipulated that I meant from trees in the open; and, further, it would have been advisable to have given the names of the varieties judged by. The result quite convinced me that, with this omitted proviso stipulated, my judgment was nearly correct, as out of about forty varieties, nearly all of which bloomed, I only had one variety that carried a crop and two or three others with straggling fruits. In planting I had made the far too common mistake of omitting well-tried local varieties, such as the Hessel and others, and had substituted those of higher standing. Of the old varieties grown in the locality the crops have been enormous, but of course the Pears failed to swell to their natural size in such a sunless season; and whether they would have swollen satisfactorily had the season been a dry hot one is a matter of opinion.

For the loss of the crop of, perhaps, eight-tenths of the varieties grown we are told to blame the wet during the blooming period. The wet I concede may have had a detrimental effect, but if to the wet solely we are to attribute failure, then I contend the wet would have affected the bloom of all varieties much alike. This it certainly did not do. Now, habitually, I make it a duty to prove to my own satisfaction if possible anything with which I am connected wherein I have doubts. In my vinery, and after I had discovered that the pith of all the wood of the fruit spurs was blackened, I bloomed over 170 trees; and of the Pears, excepting one or two very small trees of *Beurré de l'Assomption* that were entirely covered with snow, only Marie Louise d'Uccle bore a satisfactory crop. With one of the former miniature trees that, to begin with, possessed only two fruit buds, I afterwards took first prize at Newcastle, the tree—only 21 inches high—having two very fine fruit. Of the latter, possessing a large quantity of two and three-year-old trees, and having great faith in their superior hardiness, after the frost was gone I carefully lifted



and potted a great many, all of which carried a crop; and with one at Ryhope, carrying nine fruits, I took first prize, there being seven competitors, including two pot Vines in the competition. This to my satisfaction further proved the superior hardiness of the Marie Louise d'Uccle Pear; and my other little pet Pear being protected by the snow, proved that but for the frost all my other very fine collection would also have set their fruit. To further confirm my opinion, and also strengthen my position at the exhibition table, I ordered six Souvenir du Congrès Pears and six Pine-apple Nectarine trees from Mr. Rivers, and, except one Pear which died, the rest set almost every fruit. I thinned the Pears to two and three, and the Nectarines to six and eight on each tree, and the Pears were so very fine that one of the Judges at the Durham Show on being questioned as to why Witherspoon had not taken a prize in the collection of fruit, remarked, "You see he had got those Pears from some nursery!" Such are of the difficulties of us amateurs when exhibiting in our own district; yet in my case, when the Pears were growing they were admired by hundreds of visitors.

When by frost a shrub or tree is killed right out it is at once removed and the cause admitted; but if not quite dead, but still so injured that during summer or autumn the sap is prevented flowing, then the cause of injury is perhaps attributed to various circumstances. My opinion is, had we had a hot May and June then many trees that survived would have died, and I was strengthened in this opinion by both Pears and Apples dying during some hot days in August; and I am also of opinion that the wet more aided than retarded the sap flowing through the injured wood, and also that it prevented many fruits falling in their half-grown state that otherwise would have done so. One certainty, the season has proved which varieties of Apples and Pears suit best our northern locality, and this is valuable information. I am quite prepared to return to the subject if necessary.—JOSEPH WITHERSPOON.

#### DISEASED TOMATOES.

I HAVE been troubled with a kind of disease on my Tomatoes the same as "D. Deal," mentions in the Journal of October 30th. I have been much annoyed by seeing splendid fruits of Hathaway's Excelsior (a very fine smooth variety) so much diseased as to be entirely unfit for the table or preserving purposes. I find that the disease affects this variety in particular, Orangefield Dwarf being nearly free from its attacks. These two varieties, the latter predominating, were planted in well-manured trenches and trained to a south wall, and I consider that it was owing to the warm aspect that I had so many handsome fruits free from disease. Most of the plants of the Excelsior variety were trained to a wire trellis which divided a long flower border from another portion of the kitchen garden, and here the disease was most destructive to the fruit, although the plants appeared comparatively healthy. They grew strongly till the fruit commenced colouring, when the disease appeared, and the greater part of the crop was totally useless. I had not been troubled with such a failure by disease till the year 1877, and then only in this variety. In looking over my garden memoranda I find off the same number of plants of each variety I only sent into the house 388 fruits of Hathaway's Excelsior against 1287 of Orangefield Dwarf.—F. H. FROUD.

#### THE FROST.

ACCOUNTS of the frost received by us from various districts shew how general it has been; and in some instances its severity is remarkable. It is to be remembered, however, that thermometers vary exceedingly, and probably in several instances the records are not strictly accurate; still, as they are as likely to be a few degrees too high as too low the returns may be taken as approximately correct, and making due allowances for the variations referred to the frost has been unquestionably severe.

As very few correspondents have given the readings of the thermometer (the correct mode), the majority having quoted the "degrees of frost" in the manner popular amongst gardeners, it will be convenient therefore and intelligible to all if we give the number of degrees below the freezing point to which the mercury or spirit in the thermometers has fallen in various districts.

In the metropolitan district but little snow has fallen, yet the intensity of the frost is apparent by the strength of the ice on the lakes in the various parks, on which thousands of

persons have disported during the past week; the Thames, too, has occasionally been covered with thick floating ice brought from the upper part of the river. In Messrs. Veitch's nursery at Chelsea we are informed that the mercury on the morning of the 7th inst. was at 20° below the freezing point, the lowest during the frost. At Chiswick the weather has been severe. On November 15th the mercury fell to 15° below freezing point. Several Vines in the large conservatory were strangely affected; in some instances every leaf on a single rod being crumpled, while those on other rods proceeding from the same stem were uninjured. On December 2nd the mercury fell 16° below freezing point. On the 5th a similar temperature was registered. This also singularly affected some Vines in the conservatory, although the temperature in the house ranged between 40° and 45°. On the 6th inst. 19° were registered, but on the following day the lowest reading was observed—viz., 22° below freezing point. The barometrical readings have been high—viz., from 30.5 inches to 30.6 inches. Euonymuses appear to be much injured, and much further change is expected.

**SURREY.**—The temperature has been very low in the vicinity of Kingston-on-Thames during the last ten days, there having been frost and slight falls of snow on almost every day in December, the temperature reaching the lowest on Sunday morning last—viz., 22° below the freezing point. Vegetation has suffered severely.

**KENT.**—At Barham Court near Maidstone the night temperatures during the frost were as follows—December 1st, 25°; 2nd, 20°; 3rd, 12°; 4th, 14°; 5th, 10°; 6th, 30°; and on the 7th 19° below the freezing point. Much snow has fallen during the week.

**ESSEX.**—Snow fell at Orsett on November 21st, and much of it lay to Dec. 5th, when it was joined by more, in all amounting to about 3 inches in depth. On the night of December 1st the mercury of the thermometer 3 feet from the ground fell to 23° below the freezing point, on the 2nd to 15°, and on the 7th to 22°. We hear that it has been more severe at other places in the country, but have no reliable data. It is too early to speak of the effects of the frost, but Veitch's Autumn and Snow's Broccoli are much damaged both in private and market gardens; and Celery in the fields, being almost leafless in consequence of the attacks of the larvæ of the Celery fly, must be severely injured.

**BEDFORDSHIRE.**—The frost during the past week has been very severe in the neighbourhood of Biggleswade, the mercury falling on Saturday night the 6th inst. to 28° below the freezing point. But for the 3 inches of snow which fell on the previous night vegetation must have suffered very much. Ice on the lakes is 5 inches thick. Nearly all outdoor work is stopped. The frost is the most severe that has been experienced for many years.

**SUSSEX.**—In mid-Sussex the winter has set in with unusual earliness and severity. November 14th brought the first sharp frost; snow fell on the 20th and subsequently. Slight snow showers have been frequent, but it has not been deeper than 3 to 4 inches. The frost continues unbroken. On the 2nd inst. the mercury reached 19° below the freezing point. It was equally cold on the 6th. In a garden on the lower slope of a valley by a tributary of the Ouse the temperature registered is on an average 10° lower, and affords a striking illustration of the importance of selecting high yet sheltered positions for gardens. Curious variations of temperature occurred in the neighbourhood of Uckfield when the cold weather first set in. On November 16th at 7 A.M. the mercury stood at 21° Fahr., on the 17th 42°, and on the 18th 52°, frost and snow following on the 20th. Similar instances of unusual warmth in November occurring in this locality in 1846, 1847, 1852, and 1857 are recorded in Prince's "Climate of Uckfield."

**HEREFORDSHIRE.**—The weather is very severe, and as yet no snow has fallen to protect vegetation. On the 2nd, 3rd, and 5th inst. the mercury fell to 17°, on the 4th to 13°, and on the 7th to 19° below the freezing point with no signs of a thaw. Much outdoor work stopped.

**WARWICKSHIRE.**—On Saturday night in a garden at Warwick the thermometer stood at 4°, and in another garden just below it was at zero. Our correspondent says, "No plants hurt indoors, but plenty of coals burnt. Fires made up three times last night. I cannot make my man understand the art of stoking, and it is an art."

**NOTTINGHAMSHIRE.**—Mr. E. J. Lowe writes to the *Times*, from Highfield House Observatory, near Nottingham, December 7th:—The temperature fell this morning to 2.3 below zero

4 feet above ground, to 3.1 below zero at 2 feet above ground, to 4.4 below zero on the grass, and to 5.3 below zero on the snow. Since 1840 we have only twice had a lower temperature—viz., 1854, on January 2nd, and in 1860 on 24th-25th.

**NORTHAMPTONSHIRE.**—Mr. Charles M. Caldecott writes from Holbrook Grange, near Rugby—"December 8th, Saturday night. December 6th-7th was the coldest in my memory. I registered 3° below zero, and at 10 A.M. on the 7th the thermometer stood at 4°. Last Christmas my thermometer registered 4°. This house is about 380 feet above the sea."

**LINCOLNSHIRE.**—The mercury near Lincoln fell on the 2nd inst. to 27°, on the 3rd to 23°, on the 4th and 5th to 25°, on the 6th to 23° below the freezing point; on the 7th it fell to zero, and the frost continues, but not so intensely.

**DERBYSHIRE.**—The following is the record of the minimum night temperature near Burton-on-Trent on the following dates:—December 1st, 11°; 2nd, 24°; 3rd, 14°; 4th, 8°; 5th, 16°; 6th, 8°; 7th, 30°; and 8th, 10° below the freezing point. Snow fell on the 1st, 5th, and 6th, but the ground is not thickly covered.

**CHESHIRE.**—The weather here is very severe. Near Congleton much damage is anticipated amongst shrubs, &c., injury being perceptible already. "We have had," writes a correspondent, "an aggregate of 26° of frost more this season up to the present date (December 8th), then we had up to the corresponding date last year. On Friday the 5th we had a heavy snowstorm. Saturday the 6th was the most severe, the mercury falling to 28° below the freezing point."

**LANCASHIRE.**—At Norris Green Gardens, near Liverpool, the mercury fell on the 1st to 11°, the 2nd to 7°; 3rd, 12°; 4th, 17°; 5th, 14°; 6th, 11°; and the 7th to 14° below the freezing point. About 6 inches of snow fell on the 4th, and the ground is still covered with Nature's protector. The lowest register at Worsley Hall, Manchester, was 8° Fahr., or 24° below freezing point. Six inches of snow.

**YORKSHIRE.**—In the East Riding, near Sheffield, we learn that the frost has been very intense during the past week, more so than during the whole of last winter. In the low-lying valleys near the river Porter the mercury has fallen to 27° below freezing point. The river Don is frozen over, and on Saturday and Sunday thousands were on it skating. On Monday the barometer was high and the wind north-east. In the North Riding Mr. G. Abbey states that winter set in earnest on the afternoon of November 29th, snow falling in showers with a keen north wind, but up to December 2nd the readings of the thermometer were not low, varying only a few degrees below freezing point. On December 2nd to the 8th inclusive the mercury fell on the seven consecutive nights to 15°, 20°, 25°, 26°, 24°, 15°, and 7° below the freezing point. The thermometer is 4 feet from the ground, and the situation 541 feet above the sea. Snow fell at intervals during the week, the total depth being about 10 inches.

**CUMBERLAND.**—Frost set in near Carlisle ten days ago. On the night of November 29th the mercury fell to 18°, on the 30th to 14°; on December 1st to 12°, 2nd to 25°, 3rd to 15°, 4th to 10°, 5th to 10°, and 6th to 8° below the freezing point. Only about an inch of snow has fallen in this immediate district. A few miles south and east of Brayton, however, Mr. Hammond informs us that snow is lying much deeper, and the ice on the lakes in the county is in grand condition for skating.

**DURHAM.**—Mr. Witherspoon informs us that at Chester-le-Street at 10 P.M. on the 3rd inst. the thermometer registered zero, and by 4 A.M. 6° below zero; on the following morning it was a degree less. These are correct readings from thermometers belonging to Sir Henry Pottinger and D. H. Godderts, Esq.

**NORTHUMBERLAND.**—At Alnwick Castle the mercury was only 1° above zero on Friday last, at Hexham it fell to 7° below zero, while at Belford we are informed the extremely low reading of 16° (?) below zero was registered, and that at several places the mercury ranged from 5° to 9° below that point.

**SCOTLAND.**—On the morning of the 3rd inst. frost in the east of Scotland was most intense; in some districts, as at Galashiels, being 3° to 5° below zero. The frost held during the day, and in East Lothian we hear of 3½° to 5° below zero being registered; at Clovenfords 9° below zero; and in the Merse, in Berwickshire, from 8° to 23° (?) below zero. Although a large margin is allowed in the case of most thermometers in common use, yet protected thermometers of the Scottish Meteorological Society have registered below zero.

A correspondent states that at Kelso December 4th will long

be remembered, as 44° and 46° of frost were registered by two gentlemen, and three persons were frozen to death in Berwickshire. At Tynninghame in Haddingtonshire the mercury fell on the 3rd to within 1° of zero, and on the day following to 3.5° below. Roses, Aucubas, and Laurustinuses are already showing signs of injury.

**IRELAND.**—Our Clonmel correspondent writes that "it was not until the morning of the 1st inst. that the mercury fell below the freezing point—standing at 28°, while the following morning before sunrise it fell to 22°, and 17° Fahr. at Cottage, Cappoquin, the residence of the Rev. P. Power. Since then, for the last four days the temperature has oscillated between the freezing point and 21° Fahr. I have been taking a look through my flower garden, and find early Anemones that were bursting into bloom will receive a severe check and are much injured, while half-matured growth of *Lonicera*, *Jasminum*, *Escallonia*, &c., are quite blackened. Up to this frost I had blooms of outdoor Roses, Scabious, *Helichrysum*, Stocks, Pansies, Wallflowers, and Lobelias. All are now gone outdoors."

The lowest temperatures recorded in Dublin this winter were 17° below freezing point on the night of Dec. 1st; on Dec. 7th, 8th, and 9th respectively 12° below that point. This will seem to be but a very slight visitation, but we are within rifle shot of the sea, and the garden is also much sheltered by walls and trees. At other places only a short distance further inland frost has been much more severely felt.

There was no frost in London on Wednesday morning, and the barometer was falling steadily.

## NOTES AND GLEANINGS.

"R. P. B." writes, "If the comparative failure of some of the principal seed crops this year lead to THINNER SOWING it will prove anything but an unmixed evil. It is not so much the waste involved that is to be deprecated, for individually that is not extensive, as it is of injuring the plants in a young state by overcrowding. All our seeds are sown thinner than is generally the case, but even in our case it will be possible to sow thinner still without impairing the value of the crops."

— An excellent cultivator observes that "it is wonderful what a quantity of water INSIDE VINE BORDERS require throughout the dull months of winter, when it is necessary to keep the pipes slightly heated. The borders of the late vineries here were watered at the beginning of October, again in the middle of November, and about the beginning of January another application of water will be necessary. At that time the Grapes will be cut and bottled, and the Vines placed in order for another season. We have had an old structure rebuilt this autumn, and prepared for producing Muscat of Alexandria for winter and spring consumption. The border will be entirely inside. By a simple arrangement the vinery will be admissible for growing a large quantity of plants, and by having the Grapes ripe by the beginning of September we expect to have good Muscats till the succeeding April."

— THE members of the WIMBLEDON GARDENERS' SOCIETY held one of their meetings on Monday night last in the young men's rooms attached to the gardens at Wimbledon House. On this occasion Mr. Moorman, gardener to Miss Christy, Coombe Bank, Kingston, read a brief but practical and instructive paper on the culture of the *Chrysanthemum*, in which he detailed the system that he has adopted with success. In the discussion which followed Messrs. Lyne and Jordan took a very prominent part, generally corroborating Mr. Moorman's practice from their own experience as growers of the *Chrysanthemum*.

— WE have received from Messrs. Edward Webb & Sons, Wordsley, Stourbridge, a box of PRIMULA FLOWERS in six varieties—namely, white, large, well-formed, and fine; rosy purple, large, and good in colour; bright salmon pink, of good form; dark salmon pink, broad segments, rich, and semi-double; white and reddish pink, very attractive—all good flowers in clear and well-defined colours.

— A FLORAL decorator states that CHINESE PRIMROSES of the various shades of red, crimson, rose, and carmine, rank at this season of the year among our best flowers for dinner-table decoration. The soft yet rich tints are much enhanced in beauty when seen by lamplight, for they possess in a high degree that property of "lighting-up well," of which experienced decorators so well understand the value.

— "THE unrivalled Mrs. BOSANQUET," as it was termed

by the late Mr. Rivers, is one of the best continuous-blooming Roses we have. From early summer till late in autumn it keeps up a regular succession of buds and flowers. We cut our last bouquet of it on November 13th from a plant that has climbed some 15 feet high on the side of a building, and it then had a quantity of unopened buds, which in a mild winter would have continued affording an occasional flower till Christmas. It is not an exhibition Rose, but its half-opened buds are so lovely, that whenever space can be had there should be a plant or two under glass as well as on open walls, so as to prolong the season of so useful a variety.

— THE value of WALLS FOR DELICATE PEARS has, writes Mr. Luckhurst, been well shown this year. Excellent fruit of Doyenné du Comice are just now ripe from a tree on a west wall—a month later than usual; but the fruit on a couple of fine pyramids was not half grown and quite worthless. It was the same with certain other varieties, and it is also noteworthy that wall trees both on east and west aspects had full crops of useful fruit, in pleasant contrast to the barren condition of most of the pyramids.

— AT the ordinary meeting of the METEOROLOGICAL SOCIETY, to be held by permission of the Council of the Institution of Civil Engineers at 25, Great George Street, Westminster, on Wednesday, the 17th inst., at 7 P.M., the following papers will be read:—"On a Sand Storm at Aden, July 16th, 1878," by Lieut. Herbert H. Russell, 8th Regt.; "On a New Form of Hygrometer," by George Dines, F.M.S.; "On Diurnal Range of Atmospheric Pressure," by Richard Strachan, F.M.S.; "Note on a Curious Fracture of a Solar Radiation Thermometer," by G. M. Whipple, B.Sc., F.M.S., F.R.A.S.; "New Sunshine Recorder," by Robert H. Scott, M.A., F.R.S., F.M.S.

— DRACENA ELIZABETHÆ, one of Mr. Bause's hybrids not long since sent out by Mr. Wills, is valuable for decorative purposes, forming in 48-pots very handsome plants. It is compact in habit, with rather broad and short leaves, beautifully arched, and of a deep green colour, with marginal bands of rosy-red and creamy white, which, in contrast to the deep green, render it very striking and worthy of extensive cultivation.

— AMONG the numerous plants popularly denominated stove climbers, there are few that flower at this dull season which surpass in elegance MANETTIA CORDIFOLIA. This plant when trained up a pillar or rafter and bearing its pendulous orange-scarlet tubular flowers in profusion, is very attractive, and affords a most agreeable relief to the somewhat dull appearance of a stove in December. It is a native of Buenos Ayres, whence it was introduced in 1831, and is occasionally seen under the name of M. glabra.

— IN the Orchid house at Kew there is now an excellent display of that useful Orchid CYPRIPEDIUM INSIGNE. The plants are arranged across the stage at one end of the house, and are flowering very freely, the plants being vigorous and healthy. This fine old species is of great value as a winter-flowering plant, and being of easy culture it should be largely grown in all gardens where choice cut flowers are cherished, and where means are provided for producing them. The flowers remain fresh for six weeks when cut and placed in water.

— IN the aquatic house at the Royal Botanic Society's garden, Regent's Park, that queen of tropical aquatics the VICTORIA REGIA still continues to expand its large and beautiful flowers under the careful treatment it receives at the hands of Mr. Coomber. On a recent visit we were informed that the flower then expanding was the twenty-ninth that the plant has borne this season. Probably the flowers will continue opening for several weeks yet.

— ANOTHER very beautiful aquatic—viz., PONTEDERIA AZUREA, is also flowering in the same tank as the Victoria. Specimens of the plant received several months ago were placed in the tank and very rapidly spread, closely contesting with the Victoria for space. The plants now occupy a large portion of the tank, and are bearing numerous spikes of bright purplish blue flowers. Specimens were taken to Kew by Mr. Coomber, and these have flowered also. The plant is a native of Jamaica.

— AT Mount Edgcombe we learn there are fine seedling plants, now in pots, of THAMNOCALAMUS FALCONERI, the Bamboo that flowered everywhere a few years ago and afterwards died. Nowhere does the Belladonna Lily make a finer show than there. It is a favoured spot. Desfontainia spinosa makes a fine shrub nearly 6 feet high, and the Camphor Tree grows out of doors.

— THE Committee of the KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY, recognising probably the faded condition of several of the plants and blooms at their late yet excellent Show held on the 27th and 28th ult., have already determined that their next exhibition will be held on November 18th and 19th, 1880. It is to be hoped that nothing will occur to cause a postponement of the fixture, as was the case this year, and which did not prove an advantage to the majority of exhibitors.

— A RECENT telegram relative to the PHYLLOXERA IN SPAIN narrates that vineyards in Malaga, covering an area of 29,660 hectares, have been attacked by the Phylloxera vastatrix. The pest is increasing in the provinces of Gerona and Catalonia.

— PLUMBAGO ROSEA in the stove and other houses at Norris Green is now producing a fine effect, their light sprays of flower appearing above other plants of a more formal nature add a charm and gay appearance to the whole. Some of the plants in 5 and 6-inch pots from cuttings propagated in the spring have as many as nine or ten shoots. The more heat that can be given them when unfolding their blooms the better they develop.

— PROFESSOR MORREN of Liege has issued his annual extremely elaborate LIST OF BOTANISTS in all parts of the civilised world. It also includes the chief scientific horticulturists and the Editors of botanical and horticultural periodicals, the Directors and Curators of the most important Botanic Gardens, the full addresses being given in every case. This work will prove of great value to many whose correspondence is extensive in connection both with botany and horticulture.

— It is with regret that we record in our columns the death of MR. W. FARNELL WATSON of Redlees, Isleworth, which occurred on the 30th ult. at the age of 52. Mr. Watson was a patron of horticulture and an important contributor to the London shows, inasmuch as he afforded the means for the cultivation of such plants as Pelargoniums, Calceolarias, Cinerarias, Cyclamens, &c., which Mr. James has grown so well and exhibited so successfully for a number of years.

— WE regret to announce the death of MR. THOMAS KETTLES on the 2nd inst., at Archerfield Gardens, which he has managed since 1868, when Mr. David Thomson left there for Drumlanrig. Mr. Kettles had been ailing for many months, as we understand from a disease of the heart. Archerfield and Dirleton Gardens were kept by Mr. Kettles in high order, and although of a very quiet and retiring disposition, specimens of Archerfield culture occasionally were to be seen honoured at exhibitions. As a neighbour Mr. Kettles was most obliging, and he will be greatly missed by the gardeners in the county of East Lothian.

— THE death also is announced of the DUKE OF PORTLAND, who devoted so much of his wealth to the improvement of his estate at Welbeck, where gardening has long been conducted on an extensive scale under the late Mr. Tillery, and subsequently by the present competent gardener, Mr. Carr. Welbeck has become famous far beyond its own district and county by the magnitude and original character of the works instituted by its late owner, who expired on the 6th inst., in the eighty-first year of his age.

— WE learn that MR. MCKENZIE, landscape gardener, 1 and 2, Great Winchester Street Buildings, London, and late of the Alexandra Palace, has been appointed by the Corporation of London to be the Superintendent of Epping Forest. There were two hundred candidates for the appointment.

— THE demands on some gardens are at all times heavy, sometimes exceptionally so. This was the case at Melton Constable, the seat of Lord Hastings, on the occasion of the LATE VISIT OF H.R.H. THE PRINCE OF WALES. During the course of the festivities, including a county ball, Mr. Clarke, his lordship's able gardener, used about four hundred plants for decorative purposes, large quantities of cut flowers, and made 121 bouquets. From thirty to forty bunches of Grapes were dished up daily, and other fruits in proportion. There was also a great demand for the choicer kinds of vegetables.

#### PRIZE CARDS AT EXHIBITIONS.

MR. BARDNEY has, on page 423, directed attention to an important subject, and one which is worthy of the attention of the managers of all shows who have not yet adopted the mode of affixing the prize cards which he there describes. What

is commonly termed the blind system, or judging under numbers, is fast becoming obsolete; still the plan is adhered to by the managers of one or two important provincial exhibitions, and is continued at several smaller shows in various parts of the country. At a recent large show that I visited it was almost painful to witness the rushing of officials backwards and forwards to and from the classes to the secretary's department to obtain the names corresponding to the numbers to which prizes were awarded, and placing the prize cards on the right collections. The work was evidently arduous, and caused great anxiety lest mistakes should be made; indeed, notwithstanding the care exercised some were made, and were with more or less difficulty rectified. On the advantages of the system described by Mr. Bardney being mentioned to the secretary he replied with a shake of the head, "Ah! the plan is no doubt good, but then we do not want the judges to know whose collections they are judging." My reply was, "Of course you do not, neither do the judges want to know, nor indeed are they more likely to know under what may be termed the South Kensington plan than under the intricate and labour-entailing mode of exhibiting under number and filling in the names of exhibitors afterwards, when such work is seldom properly done or completed before the influx of spectators."

The plan described by Mr. Bardney is not a tentative one, but its practical worth is thoroughly established. It is safer, simpler, and more generally efficient than any other mode that I have seen, and I have had the opportunity either as judge or journalist of attending as many shows during the past few years as probably anyone in the kingdom. I can only remember one or two shows where the blind or numbering system has been adopted that mistakes have not been made, and in none where delay has not occurred in affixing the prize cards; but in the majority of cases errors have been common, and in some instances very annoying to exhibitors. At the Royal Horticultural Society's Provincial Exhibition at Preston, where Mr. Barron had no share in the department in question, there was nothing but confusion in affixing the prize cards, and mistakes were deplorably frequent; indeed had not many of them been promptly pointed out by the representatives of the Press, or had the reporters merely copied the awards in a perfunctory manner, the accounts of the show published in the horticultural papers would have been startlingly inaccurate.

And now comes the question, How did the reporters recognise the errors? The answer to that very natural question proves the uselessness of numbers for the purpose for which they are employed. It is the fact that the representatives of the horticultural press and all the best and most experienced judges know the plants and collections (if they take the trouble to examine the exhibits for that purpose) of all the chief and most frequent exhibitors as well as they know the exhibitors themselves. But, as I have previously observed, the judges do not wish to know whose collections they are judging; and, further, I do not hesitate saying that if they did know their verdict would not be influenced in the slightest degree. The judges who usually officiate at the principal horticultural shows are men of honour, and would no more think of not doing what they conceive to be strict justice than would Her Majesty's Judges learned in the law in the cases brought before them.

The idea which appears to yet linger in the minds of some show managers, that judges of reputation would turn up a card to see an exhibitor's name when discharging their duties and so be influenced, is utterly and unquestionably fallacious. I can truthfully say that I have seen thousands of collections judged, and not in one instance have I seen a judge turn up a prize card, indeed that is the very last thing he would think of doing; and, further, I have neither seen nor heard of a single case of dissatisfaction in reference to the mode of judging referred to by Mr. Bardney, while mistakes are extremely rare, and the prizes are affixed as the judging is done with the greatest celerity, and the entire system works smoothly and satisfactorily.

Besides, when a card containing the name and address of the exhibitors, with the class, description, and number is placed before every collection, the exhibitor has the recognition to which he is justly entitled. Many collections only fail by a point or two to obtain prizes and yet are highly meritorious, and why should a competitor who really stages in a commendable and praiseworthy manner not be credited with his work if he chooses? An exhibition, too, is far more interesting to spectators when they can see the names of the competitors in the various classes, whether they have received prizes or not.

When numbers only are placed on the exhibits, the names

of the competitors being thus pointedly hidden from those who adjudicate, it is a silent but none the less emphatic mode of informing men who are as honourable as the officials themselves that they cannot be trusted. On all grounds, therefore, it is to be hoped that the blind system founded on mistrust will soon be abolished. In some small local shows, judged by local men, some masking of the exhibits and competitors may be desirable, but as a rule the employment of local judges is a mistake. It is invariably better to secure judges of public repute, and to trust them, and they are sure to discharge their duties with strict justice and impartiality.—J. WRIGHT.

### GELASINE AZUREA.

IN reply to a correspondent, "J. B.," who desires a description of the above plant, bulbs of which he has received from Belgium, we cite the following from a previous issue of the Journal:—The *Gelazine azurea* was first introduced into this country in the living state in 1837, having been sent from Boston, U.S., to the collection of the Dean of Manchester at



Fig. 48.—*Gelazine azurea*.

Spofforth, where it flowered and ripened its seed. It is a native of the Banda Oriental, and the province of Rio Grande, where it occurs in stony places. It is sufficiently hardy to bear exposure in this climate, especially if covered with a few dry fern leaves, and, like some of the Irises, retains a part of its foliage through the winter. It is readily raised from seed, and young plants will produce flowers the second season; so that it will, we hope, soon be classed amongst the commonest of our hardy bulbs. The seeds germinate most freely when sown as soon as ripe, on a gentle heat, and the seedlings should be kept growing through the winter. The plant also produces offsets, by which it may be increased.

It grows from 18 inches to 2 feet high, the flower stalk being furnished with four bracts placed at regular distances, the upper one being leaf-like. The leaves are from 1 to 2 feet in length, and about 1 inch in breadth, pointed at their extremities, and plaited, as in the case of the Tiger-flower (*Tigridia Pavonia*). The flowers are produced from a spathe, which is shorter than their footstalks. The funnel-shaped limb of the blossom is divided into six regular segments, alternately smaller, which are united at the base into a tube; each segment is marked



with white at its base, on which are several black spots, the segments themselves being of a deep blue tint. The three filaments are united into a short tube, in other words monadelphous, the anthers tapering upwards, and opening by their sides. Style simple, divided into a three-lobed stigma. Capsule egg-shaped, opening when ripe at the top by three valves. Seeds angular, flat at top, tapering downwards. One of the divisions of the flower, and also the monadelphous filaments, are shown separately in the engraving.

#### BEDFORDSHIRE TWIN APPLE.

HITHERTO the only variety of Apple that has produced fruit of a twin character has been the Cluster Golden Pippin, but that which we now introduce for the first time to public notice is another, and of a very different kind. The Bedfordshire

Twin Apple was brought to our notice in 1877 by Mr. George B. Clarke, chemist, of Woburn, Bedfordshire, who sent some specimens which did not convey the whole of the characteristics of this variety. This year Mr. Clarke has again sent us some better examples, showing the fruit in its two characters of single and double. The history of the tree is thus supplied by Mr. Clarke:—

"I have been over to Mr. F. Bowler, butcher, of Husborne Crawley, about a mile or so from here, where the said twin Apple tree is growing, and have selected a few fresh specimens of the fruit and have sent the same off by fast train this evening. The fruit is smaller this year than it generally is, and has been gathered now about a fortnight. Mr. Bowler informs me that it will keep sound in ordinary seasons until the following July.

"With regard to the history of it, he informs me that he had

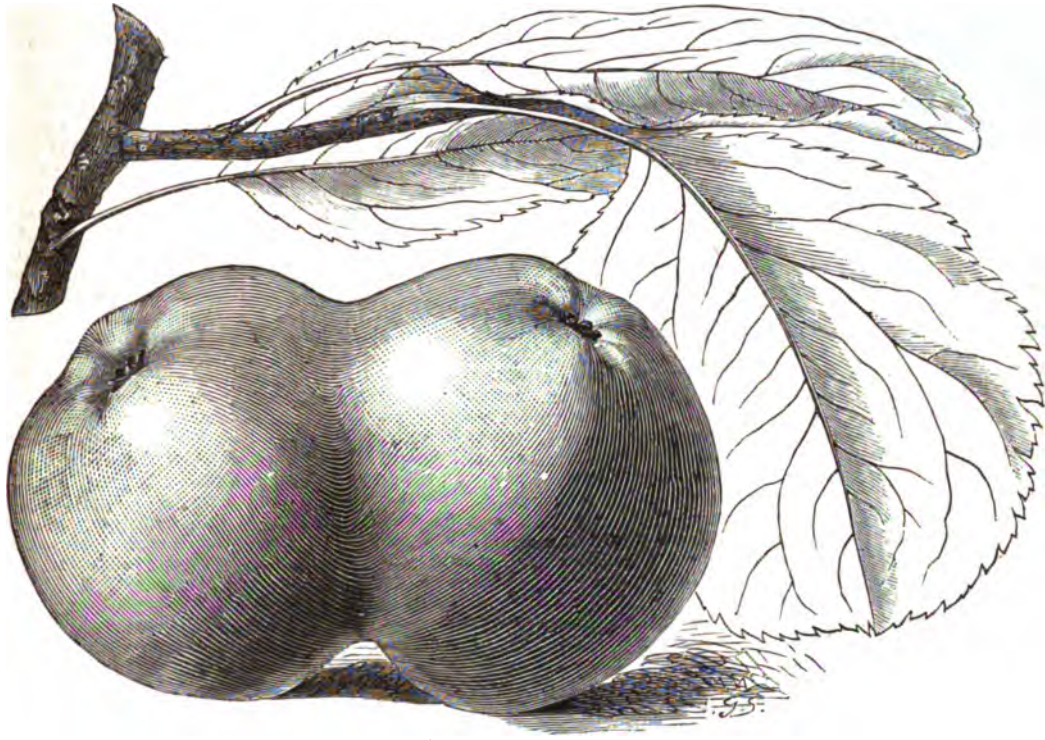


Fig. 46.—BEDFORDSHIRE TWIN APPLE.

the grafts about twenty years ago from an uncle of his (who was a gardener), from the garden or orchard of a Mr. George, who lived at a place called Bythorne, near Huntingdon. It is very late in coming into bloom, and generally has a crop of Apples on one side or the other every year. This year it fruited on the side of the tree facing the north-east; last year the south-west side. I believe a nurseryman of the name of Mr. G. Handscomb, at Woburn Sands, near the railway station, had some grafts last season, and has about thirty or so of them taken, so that anyone desirous of having the Apple will be able to get one, unless the demand exceeds that quantity. The tree of Mr. Bowler's was grafted near the root, and has an upright stem or trunk for about 6 or 7 feet and then branches out on all sides. I may say it blooms in very close clusters and a very white bloom, which makes it look very conspicuous at that season."

The fruit is generally about one-third larger than is represented in the figure. The single specimens are roundish-ovate, obtusely ribbed, especially round the crown. The skin is bright red, mottled with a darker shade of the same colour, and this extends almost over the whole surface, except in such places as are shaded, and there it is greenish yellow with faint broken streaks of red. The eye is closed, with convergent segments, and set in a shallow plaited depression; sometimes it is nearly level with the surface. The tube is short, funnel-shaped, and

the stamens median. Stalk very short and deeply set in a wide, shallow, saucer-like hollow. Flesh very firm and solid, not very juicy, briskly flavoured; cells closed. The twin fruits vary considerably in the degree of the twin development. In some Apples there is the mere suspicion of a swelling surmounted with a small "eye;" others have a small twin the size of a hazel nut attached to one four times its size, and so on in progressive development till the pair are uniform in size, as they are represented in our engraving. It is an excellent cooking Apple.

#### PROTECTING PLANTS IN COLD FRAMES AND PITS.

Snow being a good protection for plants against frost, we are surprised that some gardeners are so studious about its removal from the lights of cold frames and pits wherein are wintered half-hardy plants. Placing protecting material on frames at night and taking it off by day is an altogether needless proceeding, and with a good thickness of snow over the lights we have a protective substance equal to any other of the same thickness; by banking-up snow against the sides and ends of the frames or pits the plants will be safer than under the process of alternately protecting and uncovering. Provided no artificial heat is employed all plants, no matter whether



they be Calceolarias, Pansies, Carnations, &c., Cauliflowers, Lettuces, &c., are just as well in darkness from the time of frost and snow setting in to that of a general thaw, whether the frost's duration be prolonged from days or weeks into months. The only precaution necessary is to keep them from air and light until they are thoroughly thawed. It is a mistake to uncover the frames upon every appearance of a thaw, which only tends to injure the plants.—G. A.

### THE OLD MARKET GARDENS AND NURSERIES OF LONDON.—No. 28.

IN the early articles of this series some account was given of various interesting localities to the north of the metropolis, and we would now add to our previous notes a few gleanings that have been gained subsequently. During the comparatively short period since we commenced to write upon this subject the builders have been actively bringing about changes which may be advantageous to ground landlords, but which, as a correspondent of a popular magazine has regretfully observed, substitute for fields and gardens "a wilderness of bricks and mortar," less pleasing to the æsthetic eye. Clearing the ground, too, is now often root-and-branch work, whereas some fifty or sixty years ago when nurseries or small parks were devoted to building purposes, many of the trees and shrubs were left, so that in squares and gardens formed about that time may be seen exotics of a hardy kind, which are descended from some of the first specimens received by London nurserymen who had land on the northern heights early in the eighteenth century. At present the house speculator is apt to be merciless, and if remonstrated with when preparing to cut down some venerable or handsome tree, is quite likely to reply in the words used by one to whom Tennyson, our Laureate, addressed himself at Hampstead, in a protest against such destruction, "Trees is ornaments, what we wants is utility."

Hoxton, a district that to us seems almost a part of London proper and not suburban, certainly not rural, is referred to by Gibson in his "Survey of the London Gardens," made during the reign of William III. Long after his time Hogsdon (for such was the original name), was still so much of a village that we find an author wondering whether the City would ever reach it and swallow it. This the City has done without satisfying its appetite. Here once were the grounds of Ricketts, Pearson, and Darby. Of the three men Gibson appears to give precedence to Darby, who was celebrated as a cultivator and importer of evergreens, a demand for which was increasing towards the end of the seventeenth century. He tells us that Darby raised striped Hollies by inoculation, and like a sensible man, he kept a book of dried specimens, or probably several, as a record of plants reared in his establishment. Later in horticultural history we have Thomas Fairchild a resident here, though we cannot say whether he was a successor to one of the three nurserymen mentioned by Gibson. He had not only a nursery but also a vineyard, and is remembered as the author of "The City Gardener." The Royal Society honoured him by hearing a paper of his on the motion of sap in plants. It is noteworthy that he, dying in 1729, bequeathed an annual guinea for a botanical sermon, a sum which was raised to three by subscription as being insufficient. Bassington had a small nursery at Kingsland in Gibson's time, and near the road to that place were the "City Gardens," which have been referred to as being an early instance of allotment gardening, for in the period of the Tudors, or before, the citizens had plots here to cultivate culinary plants and herbs. A map of 1810 exhibits the space occupied by the "City Gardens" still undisturbed, and near them is Hemlock Barn, perhaps significant of the growth of weeds on some of the waste ground there. Eastward, towards Hackney, is shown a wide extent of garden land intersected by a winding lane. But in the peaceful years following Waterloo building and road-making went on rapidly, and the market gardeners moved farther to the north and east. Those who commenced, little dreaming how streets would multiply, in more instances than one named their new rows of houses "Pleasant Place," or "Prospect Terrace," soon ludicrously inappropriate.

Several very old residents in London remember well two farms that were formerly close to the bustling thoroughfare, Oxford Street, on its north side. Some of the land was used for growing vegetables, and part was grass. In 1776 the open ground reached nearly to Tottenham Court Road, now it is all built upon except the portion which appears by the maps to

be included in the Regent's Park. Messrs. Alsop and Wheler held these farms during the latter years of the eighteenth century. In saying, however, that this land is covered by buildings, we, of course, except the space given to those squares, which are a marked feature of north London. In a few instances these have been occupied by nurserymen, as was Euston Square until recently. This had received the name of the "Bedford Nursery," and announced itself as "established in 1801," but a map of Marylebone dated 1778 shows a nursery on the same spot. Amphill Square, at first "Russell Crescent," was probably formed into a nursery about 1808, not earlier, and this ceased to be a nursery in 1878, when there was a sale of Palms, Yuccas, Dracenas, Araucarias, &c., the last proprietor being Mr. Robert Green.

Concerning Islington and its vicinity we would note further that its nurseries from the local history appear to have been most flourishing about seventy years ago. The name of Bassington is recorded as the holder of some twenty acres of market-garden and nursery ground there, no doubt a descendant of the Bassington whom Gibson visited in the seventeenth century. Mr. Townsend in 1806 took for nursery purposes five acres of land which had been the practice ground of the Islington Volunteers, and he had also land at "Frog Lane." His nursery we presume to be identical with the one now occupied by Mr. Solomon, situate between Upper Street and Park Street. Amongst the nurserymen of that period we find Messrs. Barr, Parker, and Watson, but their names have not connected themselves with any specialities. In one of the curious advertisements in the "Connoisseur" (March 4th, 1756), we read that Mr. William Redmond of Islington, has produced a fine Auricula called the "Triumph," offered plants at half a guinea each, so we may conjecture he had then what our ancestors styled a "sale garden." An old tavern at Canonbury with the sign of the "Rosemary Branch" is, as in several other places near London, a reminiscence of some herbary or physic garden that has long vanished. Loddiges' nursery at Hackney has been already mentioned; a few more particulars may be given concerning a place to which visitors from afar resorted as to one of the principal sights of London. It was so contrived that the buildings enclosed three sides of an open space. Entering a series of hothouses the visitors passed to the grand Palm house, thence to the "dry stoves for bulbs," beyond was the double Camellia house, and greenhouses for various plants. Within the area were arranged frames, numerous American and herbaceous plants not under glass, and collections in pots ready for sale. On the north side were propagating pits and plantations. The arboretum was considered to be very curious; it was composed of a number of winding paths with short connecting paths at intervals, and the termination of the walk brought the visitor into another circle laid out with grass paths and flower beds. In this arboretum on one side of the walk were trees and shrubs, on the other Roses and mixed herbaceous plants. The trees were arranged according to genera and species, with varieties also, and behind the named examples were placed stools and stocks, or young specimens for disposal. All the names were painted on bricks half sunk in the earth. Perhaps the mantle of the once famous Messrs. Loddiges in north London may be said to have fallen on Mr. B. S. Williams of Holloway, whose Victoria and Paradise Nurseries, though only about three acres in extent, are nearly all covered with glass, and the specialities are numerous and varied, including Orchids, Ferns, Palms, and many stove or greenhouse plants. These nurseries have been in existence about twenty-four years.

Inspecting the Stepney of the present time, as one obtains a view of it from the railway that passes over it, it is not easy to picture it to oneself as a beautiful bit of woodland belonging to the Bishop, into which the Londoners strolled during the summer to hear the birds sing and to gather wild flowers. When cleared of its trees most of it became pasture land. Lyons notes in 1794, that of its 1500 acres not more than 130 were brought under cultivation, and of this land that had been ploughed up the market gardeners held about 50 acres. Houses and factories, as was to be expected from the growth of London, gradually reduced the garden ground during this century. At Bethnal Green, a hamlet of Stepney, there were also market gardens, and some of these remained until 1847 or 1848, principally in the neighbourhood of Cambridge Road. To horticulturists this locality is memorable as having the abode of Sir Hugh Platt, a place called Kirby Castle, and in his garden attached thereto he experimented in raising Roses and in grafting Carnations and Gilliflowers. At Mile End

beyond Whitechapel there was formerly a nursery frequently referred to by writers upon exotics during the eighteenth century. It was founded by one Gordon about the middle of that century, who made it over to his sons James and William in 1776. Next it was the property of James Gordon and two others, Denner and Thompson. Subsequently Thompson became the sole owner. When London visited it in 1835 only a small portion of the original ground was left untouched, but he saw what was believed to be the oldest Salisburia in England, also aged Magnolias, an old Ailantus, Cork, and other Oaks, and large Tea plants growing and thriving in the open air. Gibson has an allusion (1691) to a Clements of Mile End, about whom we only know that he had many curious "greens," and made White Muscadine and Frontignan wine from Grapes of his own producing. We have, by the way, even yet a Vine Nursery not far from Mile End, in the Hackney Downs Road, but the atmosphere of the district does not seem promising for Vine culture at present. There are yet various market gardens to the east of London; their date is comparatively modern, and their history not remarkable. We might, however, add here, as an ascertained fact ere we conclude, that down to the year 1850 at least those horrible inventions known as mantraps were occasionally set in London orchards or market gardens. These were of two kinds; the humane (?) trap simply broke the leg of the person caught, the other sort not only did that but also crushed the bone!—O.

#### NOTES ON VILLA AND SUBURBAN GARDENING.

VERY little can now be done out of doors; all planting, trenching, and such work have to be suspended for the present. Wheeling manure on the ground between Raspberries and other fruit trees, and on vacant spaces of ground ready for digging-in, is one of the best employments during such severe weather as we are now experiencing. It is warm employment for the men, and the manure is carried so much lighter and cleaner than during wet weather. In gardens where many trees abound leaves may yet have to be collected, for they have clung very pertinaciously to the trees this year. Place the leaves in a heap in a frame yard, and when thoroughly mixed with some long stable manure the mixture will soon form suitable material for making hotbeds for Cucumbers, Potatoes, Radishes, Carrots, and other vegetables that are required to be supplied early in the year. In many gardens complaints, especially in small villa gardens, are sure to be raised this winter over the scarcity of vegetable crops, for in the majority of such places there is rarely sufficient area of kitchen garden to supply the demands of the family during a severe and protracted winter. Crops planted or sown in accordance with the method and directions in ordinary seasons are this year fully a month or six weeks later than usual, so late that in many cases vegetables that would otherwise have proved useful are now completely destroyed. Veitch's Autumn Broccoli are only just commencing to form their heads; Celery is small, and severely infested with the Celery fly; Turnips, unless sown very early, have not reached a size suitable for drawing; Beet is generally small, and Brussels Sprouts very late, so vegetables generally must be scarce; it will therefore become the duty of everyone to make whatever amends is possible by forcing, and much disappointment may be averted by timely consideration and action.

Asparagus, Seakale, and Rhubarb are the easiest of vegetables to procure by artificial means if strong and sound roots be selected. The first of these is possibly the most important vegetable of the three, and does not require a strong heat to cause it to push quickly—in fact, the more gently it is forced the stronger and better flavoured will be the shoots. A good plan is to make up a hotbed principally of leaves, over which an ordinary garden frame is placed, and the roots are planted thickly together, covering them with some light soil. Many cultivators sow Radish seed over the surface, young and sweet roots being thus obtained. Wood's Early Frame Radish is a good variety for this purpose. Seakale is forwarded in several ways. The two simplest are the lifting of some strong roots, placing them in boxes under the stages of a stove, and covering them over to exclude light; and by placing an inverted pot over the crowns on the ground as they are growing, and covering the pots with a mixture of manure and leaves, the gentle warmth from which will excite growth. The latter plan is to be preferred when large supplies are required. Those who have the advantage of a Mushroom house have only to lift sufficient roots and place them therein to procure fine blanched crowns. Rhubarb is forced in a similar way, and is most appreciated when of a bright pink colour. A temperature of 50° to 60° is sufficient to procure well-flavoured produce, and the temperature should never rise above the last-named degree.

GREENHOUSE AND CONSERVATORY.—Sufficient fire heat must be maintained in these structures to exclude frost, but by no means allow an excessively dry heat, or many plants will become dry. Any water required should be given early in the morning,

so that there is some chance of the soil drying before the evening. Chrysanthemums, which have kept these structures so gay during the past six weeks, are now fading fast, and as they go out of flower should be cut down and removed, reserving the roots for a supply of cuttings for next year, cuttings of which may be inserted in small pots in light soil any time from now till March. Many good growers take the earliest cuttings obtainable. Rhododendrons, Azaleas, Dentzias, and several other easily forced shrubs must be forwarded to take the place of the Chrysanthemums. Bulbs will also be coming into flower, which by the new year will make the conservatory gay.

#### WORK FOR THE WEEK.

##### KITCHEN GARDEN.

THE ordinary routine of operations in this department being interrupted by snow and frost, it becomes necessary to turn attention to matters which can under such circumstances be executed. Amongst these may be enumerated the preparation of Pea sticks, stakes in suitable sizes for all purposes, pegs for layering, &c., and twigs for laying-in the summer growths of such wall trees as Peaches, Nectarines, and Morello Cherries. The clippings of Privet hedges will be found most suitable when tied in bundles to straighten, and placed in a shed where they will become somewhat hardened. Potatoes intended for planting in the ensuing season should be placed in single layers and kept cool, frost being excluded, so as to prevent early growth. The emptying of pits and the turning and mixing of compost heaps will afford plenty of employment.

##### HARDY FRUIT GARDEN.

In favourable weather push forward the operation of pruning, nailing, or tying-in wall trees. In pruning old trees, especially Apricots, Pears, and Plums, overgrown, old, and barren spurs should be gradually cut back so as to keep the fruitful buds as close to the stem as possible. Some gardeners object to the pruning of Apricots until the buds are beginning to swell in spring, as when pruned in early winter the extremities of the shoots are liable to die should the winter prove severe. Such, however, is not our experience, for beyond the shortening of projecting spurs the removal altogether of worn-out spurs and shoots, and thinning where they are too crowded, there will not be much to do in autumn if summer pruning has had proper attention. If the trees are not unfasted from the wall they must be closely examined for ties or shreds that are too tight. The damage inflicted by tight ties, a nail injuring the bark, and not over-careful use of the hammer, is often serious, especially to Apricots, Cherries, Plums, and the Peach and Nectarine. Peaches and Nectarines may now have the bearing wood of the past season removed, and any old branches which can readily be replaced by younger and more fruitful growths. Beyond this and cutting back growths to originate shoots at the required places for regularly filling up the wall space no further pruning is needful; for, as a rule, the more fruit trees are cut in winter the more they will grow the following season and be correspondingly unfruitful. Apples, Pears, Plums, and Cherries, whether grown as espaliers, bushes, or pyramids, may now be pruned with advantage, staking and tying as may be necessary. To make handsome and fruitful trees, pyramids and bushes should be moderately well thinned, as where hard stopping is practised during summer they are apt to become crowded, especially in the centre, and for want of air and light not infrequently die or become so weakened as to seriously affect the prospect of a crop of fruit or its maturation. If there be any scale on Pear or Apple trees they may be dressed with paraffin, applying it with a brush, taking care that it does not run down to the roots. There is some danger of applying paraffin where the wood is unripe. A solution of soft soap 1 lb. to a gallon of water, adding a wineglassful each of spirits of turpentine and methylated spirits, applying with a rather stiff brush, will destroy scale. Moss or lichen may be destroyed by sprinkling them with quicklime whilst wet. The Raspberry is one of the most useful of hardy fruits and is variously treated, but all growers agree in its requiring deeply trenched highly manured ground, planting in lines from 4 to 6 feet apart, and 3 to 4 feet from plant to plant, the larger distance in each case being preferable. Some secure the canes to stout stakes 4½ to 5 feet above ground, and cut the canes back to the height of the stakes, whilst others dispense with the stakes, merely tying the canes together. Others tie the end of one set of canes to the one next to it in the line, so that each two plants form an arch of bearing canes. Others train the canes to light rails or strained wire similar to espaliers; and some merely thin-out and shorten the selected canes, employing no support except it be a light rail or strong tarred string to support the outside canes. The various systems each have advantages. We have seen good crops produced by all. The canes should be thinned-out from four to six to each stool, selecting the strongest and best placed. A good dressing of manure should be given and be dug or forked-in, merely pointing it in near the stools, but between the rows and plants it may be placed lower down, but the less the roots are disturbed the better. The pruning of Gooseberry and Currant bushes should also be proceeded

with, though where bullfinches abound many persons have so great a dread of their ravages as to defer the pruning until spring. In pruning, the bushes should be kept open in the centre, and the shoots on the main branches cut back to within an inch or rather less of their base, having the branches from 9 to 12 inches apart, shortening the terminals as may be necessary to form symmetrical bushes, whilst those that are as large as desired may be closely spurred-in. Black Currants should not be spurred, but have the old wood well thinned out and any old elongated growths shortened. After the pruning is completed a good dressing of manure should be applied and be dug or forked-in.

#### FRUIT HOUSES.

**Cucumbers.**—In the present severe weather the progress of Cucumbers is very slow. A regular temperature may be set down as of first importance. The night temperature may be 65°, and if it fall 5° during the night in severe weather it will be better than a higher temperature, 70° to 75° by day will be suitable, the bottom heat being steadily maintained at 80°. The water applied to the roots must be warm. Continue to remove old foliage and exhausted growths from the autumn-fruiting plants, but do not stop the growing points too much for the next two months. Avoid overcrowding and overcropping, giving a liberal encouragement to the roots by applying fresh compost as they protrude through from time to time, and an occasional watering with weak liquid manure. Remove all tendrils and staminate flowers from the winter-fruiting plants.

**Peaches and Nectarines.**—Fire heat may now be applied to the earliest house if it has been duly closed and prepared for forcing; but the night temperature must not exceed 50°, and should be kept at 40° to 45°, 55° not being exceeded by day by artificial means and 65° from sun heat, 50° from fire heat being sufficiently high by day in dull weather, as the best results are obtained by gentle excitement of the trees in the early stages of development. Admit air when the temperature inside is 50°, and increase the ventilation with the temperature. Syringe the trees, walls, &c., with water of the same temperature as the house on fine mornings, and again in the early part of the afternoon. Carefully avoid sudden changes of temperature and a stagnant vitiated atmosphere after the buds have started growing. Proceed with pruning, washing, and tying-in the trees in succession and late houses, keeping the houses cool and well ventilated. Some take the very early fruit from trees in pots, and where trees have been potted and grown in heat the previous season so as to acquire an early habit for forcing they answer fairly well. The pots may be plunged in slight bottom heat if there be a pit, or a fermenting bed can be made on the floor of the house, the temperature at the roots not exceeding 65°. Hales' Early is far the best early Peach, but Early Beatrice is several days earlier. Early Alfred and A Bec are good early kinds, and to succeed them Royal George (the best of all for forcing), and Grosse Mignonne, Noblesse being excellent. Lord Napier, Hunt's Tawny, Rivers' Orange, and Rivers' White are suitable Nectarines.

**Figs.**—There must not be any further delay in starting the trees in pots that are to afford ripe Figs early in May. The culture of trees in pots for early forcing is to be recommended as preferable to starting trees which are permanently planted out at this early season. Moderate heat at the roots is highly beneficial provided it be regular and does not exceed 70° in the early part of the forcing process, as a higher temperature has a tendency to encourage growth too rapidly; therefore avoid bringing up the materials too high if the pots are stood on pillars of brickwork as previously advised, or do not plunge the pots deeply into the bed if the heat exceed 70°. See that the balls are thoroughly moist before the pots are plunged, and if the soil is very dry immerse the pots in water. Let the night temperature be 50°, and 55° by day from fire heat, advancing to 60° or 65° from sun heat. Keep the atmosphere moist by sprinkling the usual surfaces, and syringe the trees twice a day, and above all give the trees a position where they will have the advantage of every ray of light practicable. Ventilate early Fig houses intended to be started next month, merely excluding frost, proceeding with the cleaning and tying of trees in later houses.

#### PLANT HOUSES.

**Conservatory.**—Summer-flowering climbers, such as Passifloras, should be well cut back and have the growth thinned out so as to admit as much light as possible to the plants. Any plants, as Palms, &c., infested with white scale should be cleaned as opportunity offers. The readiest means is to apply methylated spirit with a brush, and it may also be destroyed by nicotine soap 8 ozs. to a gallon of water, applying the solution with a brush, which will destroy and remove the pests, the plants being afterwards syringed or sponged with clear water. To have a good display of flowers in this structure it is necessary to maintain a rather higher temperature than is usually accorded greenhouse plants at this season. This is more particularly needful with plants which during their growth require a stove temperature, but which are employed when in bloom for the decoration of this house. A temperature of 50° by day and 45° at night will be suitable by artificial means, and 5° less on cold mornings may be allowed without injury to plants that

are brought from warmer quarters providing they have been grown in plenty of light. Of greenhouse plants now flowering the following are the best:—*Acacia platyptera*, *A. oleifolia elegans* and *A. Riceana*, *Abutilon Boule de Neige*, *A. Darwini*, *Aponogeton distachyon* (aquatic), *Coronilla glauca*, *Cyclamen persicum* var., *Cytisus racemosus*, *Correa Brilliant*, *C. cardinalis*, and *C. magnifica*; *Echeveria retusa*, *Eupatorium riparium*, *Erica colorans*, *E. gracilis autumnalis*, *E. grandinosa*, *E. hyemalis*, *E. Lambertiana*, *E. melanthra*, *E. scabruscula* and *E. caffra*; *Epacris ardentissima*, *E. Devoniana*, *E. delicata*, *E. Eclipse*, *E. hyacinthiflora* var., *E. Veauvius*, *E. Lady Panmure*, *E. lineata major*, *E. The Bride*, and *E. Viscountess Hill*; *Fuchsia Dominiana*, *F. Beauty of Trowbridge*, *F. splendens*, *F. serratifolia multiflora*, *Libonia floribunda*, *Luculia gratissima*, *Zonal Pelargonium* in variety, *Vesuvius* being far the best scarlet, and *White Clipper* the best white; *Rogiera gratissima*, *Monochæstum ensiferum*, *Primula sinensis* in variety, *Salvia splendens*, *Statice profusa*, *Veronica Andersoni* variegata, which with *Chrysanthemums* and early *Camellias* will afford no insignificant display, aided by *Lapagerias*, *Habrothamnuses*, *Taconia Van-Volxemi* as climbers, and hardy plants, such as *Schizostylis coccinea*, *Anemone japonica alba*, *Hebeborus niger maximus*, *H. orientalis*, *Violet Victoria Regina*, *V. De Parme*, and *V. Marie Louise*; the *Roman Hyacinth*, and *Paper White Narcissus* being also invaluable. At this season *Mignonette* (Miles' Spiral is far the best) is also indispensable. Then we add to the preceding plants those that require to be advanced in a temperature intermediate between a stove and greenhouse, such as *Bouvardias*, *Carnations*, *Epiphyllums*, *Heliotropes*, and *Richardias*, with forced *Azalea indica*, and plants from the stove, such as *Poinsettias*, *Euphorbia jacquiniiflora*, *Gesnera zebrina splendens*, *G. exoniensis*, *Centropogon Lucyanus*, *Mussaenda frondosa*, *Dalechampia Roezliana* roses, *Scutellaria Mocciniana*, *Plumbago coccinea*, *Thyracanthus rutilans*, *Aphelandra aurantiaca Roezlii*, *Toxicophloeæ spectabilis*, *Burchellia capensis*, *Eranthemums*, *Begonia insignis*, *B. Saundersi*, *B. parviflora*, *B. manicata*, *B. hybrida multiflora*, *B. nitida odorata*, *B. fuchsioides*, &c., besides plants such as *Tydeas*, which by not being started until June flower finely at this season; in fact, we kept back some *Achimenes* until August, and they are now very bright, and where plants of *Gardenia*, *Eucharis*, *Pancratium*, *Imantophyllum*, *Franciscoa calycina major*, and *Amaryllis* have been prepared by an early growth, and given a suitable rest, there is no difficulty in having them in bloom at this season by placing them about six weeks previously in a moist heat of 70° to 75°. *Cinerarias* are also very bright, and are easily obtained by sowing the seed early, the blue and red varieties being very useful for cutting. Berry-producing plants, such as *Solanums*, *Ardiasias*, *Rivinas*, and *Capcums*, are also of considerable utility.

**Forcing House.**—Pot Musks and place the pots in this structure. Sweet Briar should also be grown, introducing a few plants from time to time so as to keep up a supply of sprays for cutting. Introduce a few *Hyacinths*, *Narcissuses*, *Tulips*, *Jonquils*, and *Scillas* to meet the probable demand and maintain the succession, assigning them positions near to the glass. *Lily of the Valley*, *Solomon's Seal*, *Spiræas*, and *Dielytras* should also be introduced at regular intervals, and the same with *Azaleas*, *Rhododendrons*, *Lilacs*, *Deutzias*, &c., which should be forwarded gently to allow of the gradual development of the buds.

**Orchids.**—The most inactive period being reached, be careful not to employ more fire heat than is necessary to keep the temperature of the East India house about 65° by day, and 57° or 58° by night, Mexican house 51° to 60° by day, and 50° by night, the cool house 50° by day, and 45° at night, allowing a few degrees rise from sun heat. Very little air is requisite now, and when given must be by the bottom ventilators, or so as not to subject the plants to cold draughts. Attention will be necessary in damping the benches and paths every morning. The sphagnum and the roots outside the pots and baskets will require frequent damping, especially *Aërides*, *Phalænopsis*, *Saccolabiums*, and *Vandas*. *Cattleyas* and *Lælias* though rooting freely require very little water, the peat in which they are potted being of a kind that will admit of the water passing freely away. *Odontoglossums* should never be allowed to become dry, as they delight in a cool damp atmosphere. A light sprinkling overhead on fine mornings will be very beneficial to them, taking care that drip does not get into the young shoots; and as plenty of light is essential, wipe over the inside of the glass once a week with a sponge. If it be desirable to retard the flowering of *Dendrobiums* they should be placed in a greenhouse temperature and have very little water until they begin to grow, when they must be removed to a warm house, as any check will be followed by a stunted and frequently abortive growth. *Cypripediums* and *Cymbidium* require a good supply of water at the roots.

#### TRADE CATALOGUES RECEIVED.

Ewing & Co., Eaton, Norwich.—*Lists of Specialities.*  
V. Lemoine, Rue de L'Étang, Nancy, *Meurthe-et-Moselle.*—*Catalogues of Bulbs and Miscellaneous Plants.*  
Keynes & Co., The Nurseries, Salisbury.—*List of New Dahlias.*

## TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense. Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

ADDRESS (*Continued*).—Write to Vilmorin, Andrieux, et Cie., Quai de la Mégisserie, Paris, France. (E. C.)—A letter posted to you to the address you supplied us with has been returned to us by the postal authorities.

PRUNING CLEMATISSES (P. T. J.).—If the plants are grown in beds for producing low close masses of flowers they may be cut down pretty closely annually, giving the beds at the same time a liberal dressing of manure and fresh soil; but if grown on walls or trellises it is not advisable to cut the plants down, but they should be shortened to the bold buds that may be seen on the growths.

FILMY FERNS (*Idem*).—Such species as *Todea superba*, *Trichomanes radicans*, *Hymenophyllum Wilsoni*, and *H. tunbridgense* would possibly survive uninjured the low temperature you mention, but it would be fatal to the majority of species. We know several instances where *Todeas* were retained in unheated houses throughout last winter, and the plants are now in an extremely vigorous condition, thus proving that a higher temperature is not essential to their welfare. We should, however, advise you to protect your plants from frost if possible.

MILDEW ON CHRYSANTHEMUMS (A Lady).—The plants are frequently affected with mildew, when they become partially exhausted with blooming and by being crowded together in conservatories and other structures. As you deem sulphur unsightly you might try Swing's mildew composition, which has been found efficacious by many gardeners.

AZALEA LEAVES FALLING (Mrs. M.).—It is the habit of *Azaleas* to cast a number of their leaves at this season of the year, but still it is very undesirable that the plants become seriously defoliated. Sodden soil on the one hand and excessive dryness of the roots on the other, contribute materially to the undue loss of foliage. So long as the soil feels pasty to the touch the plants do not need water, but immediately it crumbles when pressed with the fingers water should be applied so thoroughly as to penetrate every portion of the soil. A temperature of 40° by night and 45° by day without sun is quite sufficient with otherwise good attention for keeping the plants in good health.

HORTICULTURAL STUDENTS (J. R. J.).—Several noblemen's and gentlemen's gardeners take pupils, but we doubt if your friends, "who have been brought up in a city business," would be considered eligible candidates; and further, private gardens are not suitable for preparing young men for engaging in commercial horticulture. A nursery training would be far more serviceable, and, indeed, is essential to gaining a knowledge of plant culture for the trade and public markets. Your young friends, without practical experience of plants and the plant trade, would run great risk by embarking their capital in the manner proposed, and the only mode that we can suggest is for you to apply to the leading nurserymen in reference to obtaining appointments for them on payment of a premium. Lectures on scientific botany are regularly delivered during the winter and spring months in the Royal Gardens, Kew, but we do not know whether they are attended by others than the students and employees of the establishment; you might ascertain by writing to Mr. Smith, the curator. Such lectures are not, we think, delivered at any other institution in or near London.

ARONIA (W. C. E.).—From your describing the tree "as somewhat like a Hawthorn" we think it must be *Crataegus Aronia*, which may be obtained under that name from nurserymen who deal largely in hardy shrubs and trees. You say you cannot find it in nurserymen's catalogues, but if you examine Vetch's, Osborn's, Wm. Paul's, Hogg & Robertson's, and Lee's lists you will find it in them all. There is also a *Pyrus grandifolia*, which is probably the tree referred to at Longleat as *Aronia*, but the latter name was rejected many years ago. The *Pyrus* is not so common in cultivation as the *Crataegus*, but the name appears in the catalogue issued by Messrs. Osborn & Sons, Fulham, from whom no doubt you might procure it.

MAKING SUPERPHOSPHATE OF LIME (*Country Gardener*).—The following extract from the "Gardeners' Year Book for 1880," which is now being distributed, will afford you the information you require:—Place 5 cwt. (or 15 bushels) of bones, on an earthen floor, surrounded by a rim of ashes; pour on as much water as the bones will suck up, and then pour on 5 cwt. of sulphuric acid; it will boil somewhat violently for a while; when this has subsided it will get tolerably solid, and the ashes and all may be shovelled up together, and will be fit for drilling in a day or two.

ROSES FROM FRANCE (A. J.).—You cannot do better than unpack them as you propose and lay their roots in soil in a cellar if the severe frost continues, but the soil must be fairly moist, and the roots must be well and firmly covered, and the cellar must be a cool one. Immediately the frost departs lay them carefully in a sheltered border outdoors for a time, and if severe weather recurs cover the stems and heads with straw. We should not plant them for at least two months, as if they are well laid in they will be safer than if planted where they cannot be protected.

HEATING GREENHOUSE AND PIT (A New Subscriber).—The greenhouse will be satisfactorily heated by two rows—i.e., a flow and return, of 4-inch pipes along the front just clear of the Vine border. The pit will require two rows of 4-inch pipes for top heat and two for bottom heat beneath the bed, which we should have on the side facing west, and 4 feet in width, leaving a pathway 2 feet in width at the back. The boiler will need to be fixed in the shed at the east end, the hot-water pipes being taken across the end of the greenhouse into the pit, along this at the back, across the south end, then along the front above the bed, returning twice through the bed, being taken across the pathway below the floor at the door end and thence to the boiler. The greenhouse flow and return pipes may be taken as branches from those of the pit, having valves so fixed in the greenhouse and pit pipes that they may be heated separately or together. One of the improved saddle boilers

would be most suitable for your purpose. We cannot give an estimate of the cost. The best plan is to send a sketch of the proposed mode of heating to a horticultural builder and ask for an estimate.

PLANTS TO MARK THE LINES OF LAWN TENNIS (J. C.).—The plants most likely to succeed are *Antennaria tomentosa*, *Cerastium tomentosum*, *Poa trivialis argentea elegans*, *Dactylis glomerata variegata*, all having white or variegated foliage, and stand as much cutting as grass. The bands or lines should be rather wide, and be trimmed occasionally to preserve their uniformity.

REMOVING MOSS FROM A LAWN (H. D. A.).—In the first place see that the ground is well drained; if not, drains should be made 6 or 7 yards apart, having proper falls and outlets, and should be 3 feet deep. It would be useless killing moss 8 inches thick, it must be removed; and as you are contemplating altering the level of the lawn and doing away with some flower beds, we should have the ground deeply dug, burying the moss, and afterwards apply a good dressing of manure. Having made the surface even sow a mixture of lawn grass seed during moist weather in April, and after raking lightly roll well. The first mowing should be done with a scythe, and afterwards use the machine, rolling frequently.

REPOTTING EUPHORBIA JACQUINIEFLORA (W. Hall).—It should be done in spring after the plants have flowered and been cut back, and when they have made fresh growths an inch or so in length remove most of the old soil and repot the plants in fresh compost in the same or a slightly larger pot. *Herniaria glabra*, *Mentha Pulegium gibraltarica*, and *Alternanthera amara* cannot be raised from seed fit for planting in June; indeed they are not increased in that way but by cuttings.

LIME FOR VINE BORDER (M. J.).—Two bushels would be a sufficient quantity of fresh slacked lime to apply to a border 80 feet by 15 feet. It is necessary to apply it to both the inside and outside borders.

HEATING PROPAGATING PIT AND GREENHOUSE (Kütte).—There is no necessity for side ventilation, the sides lights necessarily being more expensive than brick walls. The top ventilation is sufficient, having a light 2 feet wide to open the whole length of the house. You will need the piping shown in the sketch—viz., two pipes in each bed for bottom heat and four for top heat, presuming you to require the pit for growing Cucumbers in winter or early in the season, otherwise those at the sides are sufficient for the top heat necessary for propagating bedding plants, and for Cucumbers and Melons afterwards; in that case you may dispense with the pipes on the bed walls. The ventilation should be on the south side of the house; and a division would be an advantage, so to have one part in use for propagating, and the other could be used to encourage the speedy establishment of the plants after potting them off. A compartment 9 feet in length would be sufficiently large to propagate a great number of plants, and you may have the four pipes for top heat in that compartment, and the side ones in the other will be all that are necessary for top heat, along with those in the beds for bottom heat, which will be necessary only for the Cucumbers and Melons, unless you wish to use the beds for propagating purposes. The greenhouse will be satisfactorily heated by two rows of 4-inch pipes—i.e., a flow and return taken along the front and one end. The pipes for the pit should be 4 inches in diameter.

PROTECTING ROSES (J. B.).—Wrap haybands—if not too late—round the stems of the standards, partly uncoiling the top of the bands and twisting them loosely round the heads of the Roses and amongst the branches; further, wisps of hay, fern, or other loose light material placed in and around the lower part of each head and secured will be of great benefit. That portion of the Rose nearest its junction with the Briar is the most liable to be injured by the severity of the weather, and the Briar stems are also often injured during extreme frost. Dwarfs may be protected with the same material, in addition to the ground being well covered with manure; but if you have snow in your garden and heap it on the beds and around the Roses it will prove the best protection that you can apply. We are unable to answer your question relative to the National Rose Society. If you write to the Rev. H. H. D'Ombraun, Westwell Vicarage, Ashford, Kent, you will obtain the particulars you require. Your question about the Briars shall have our attention.

NAMES OF FRUITS (N. C. H. O.).—You have put no numbers or other distinctive marks on your Apples, and it is therefore impossible for us to refer to them.

NAMES OF PLANTS (F. G.).—1, *Widdringtonia cypresoides*; 2, *Retinospora filicoides*; 3, *R. obtusa aurea*; 4, *Kalmia rubra*.

## THE HOME FARM:

POULTRY, PIGEON, AND BEE CHRONICLE.

## HOUSE AND SHED FEEDING OF SHEEP.

AT various times when the management and feeding of different breeds of sheep have been under consideration in this Journal, we have on several occasions hinted our intention of treating the house feeding of sheep in a separate article, and we now propose to make good our intention. We think we have chosen a time of year for that purpose well suited for the consideration of the subject, because house feeding is peculiarly adapted for the winter season, and in fact it cannot be justified as a method of management for sheep stock during the summer months. There are various reasons which will justify the home farmer in the house feeding of sheep, more especially where pasture and park lands prevail with but a small portion of arable land attached; and whenever the arable land is found of a heavy and tenacious character it is of the utmost importance that the animals should have a dry comfortable lair and protection from the frost and storms of the winter months. We feel assured that this mode of

management of the sheep stock of the home farm will commend itself to the noblemen and gentlemen as proprietors of valuable domains in various districts of the kingdom, for the system will in nowise interfere with summer feeding of sheep on the park and pasture lands, where they are held to be by many quite ornamental as well as profitable for consuming the grass produce. We find many gentlemen whose pride and pleasure it is to possess a well-bred flock of a class of stock adapted to the soil and climate whereon they are kept. It frequently happens, too, that proprietors of estates have a fancy for certain breeds of stock, it may be Downs, Cotawolds, Leicesters, or horned Dorsets. In either case it falls to the lot of the home farmer to carefully rear and feed the animals which may best suit the estate, to be fed for profit, or used for furnishing meat for the establishment. It may also be required of him to rear and care for a breed of animals intended for exhibition at the metropolitan and other stock exhibitions; and with these and other objects in view it will be our task and endeavour to lay before our readers the means whereby these advantages can be obtained. We shall not only give our own opinions based upon a long experience, during which we have obtained prizes for sheep and lambs, and the opportunities we have had for many years of visiting the best managed estates where house feeding, &c., of sheep has been carried out with great care and with varied success, but under widely different circumstances of soil and climate, in sheds, houses, and apartments of widely different and varying construction as accommodation for the animals, as well as the saving of manure in the most economical form, having also due regard to the health and profitable feeding of the stock.

Having prefaced our subject with the foregoing observations we proceed to give illustrations of the methods adopted for house and shed feeding by those gentlemen and farmers who have taken great interest in carrying out experiments which were not only interesting to themselves, but when properly considered must be accepted as exceedingly useful in connection with the science and practice of agriculture. We will first make some allusion to the plan of producing house lambs, which has always been considered as one of the greatest delicacies and luxuries available at Christmas. We would remark that although the taste for early lamb is now as prevalent as ever amongst epicures, yet the demand for this meat at that particular period has decreased, and the system of house feeding has nearly fallen into disuse as formerly carried out; nevertheless a short description of it may not be without some point in connection with house feeding of stock. It was usual for some farmers forty and fifty years ago living in the counties bordering on the metropolis to purchase the horned Dorset or Somerset ewes which were the earliest to lamb—viz., at the end of September and the early half of October. The ewes selected were required to be of the purest breed, of the largest size and milking capacity, and also with white noses, for animals showing any black either on the nose or eyelids were rejected. The colour of the flesh of house lambs when butchered is a matter which in a great measure governs their value, and those which can be warranted to die fair in colour always obtain the highest price, and in particular seasons about Christmas time the best house-suckled lambs have been known to realise from £3 to £5 each, although not weighing more than 8 lbs. per quarter. These lambs were never allowed to run with the dam in the usual way, but were kept in a house, and as much as possible in the dark, the object being to induce sleep. The ewes were allowed to feed in a piece of land near to the homestead of dry pasture and were fed with the best roots which were in season, but nothing being better than cabbage, together with a liberal allowance of oilcake, pollard, ground oats, in fact anything which will produce milk of the best quality, the quantity being insured by the horned ewes, the most milky of any breed we have ever met with. The lambs were kept in well-littered pens, and the ewes driven into the house to suckle them three times a day, and to lie with them during the night. This process entailed considerable labour and nicety of management, but the prices at which the lambs were sold proved profitable to those who understood the business. The public taste has since altered

very much, and but few now attempt the suckling of house lambs seeing that capital lambs can now be had at Christmas time in the open air, we having often sold ten or twenty lambs at Christmas, the ewes having lived principally upon Italian rye grass and oilcake, which realised prices varying from 40s. to 50s. each. There is, however, a plan of shed feeding which is still kept up whereby the ewes and lambs are fed and accommodated in sheds and yards, and the lambs allowed to run through a lamb gate and feed separately and apart from the ewes. These lambs are often so quickly made and prove so fat and delicate that they are almost equal to lambs reared by the old style of suckling. It answers well with Down lambs, for they are by this means enabled to appear in the markets at Easter, heavier and of better quality than can be made in the open fields, even upon the driest soils, when they are properly provided for in the sheds. In proof of this we have taken particular notice during a period of nearly fifty years, and observed at the different exhibitions of fat lambs for prizes in the southern counties, that the shed-fed lambs have always obtained the prize over those fed in the field, and in consequence for many years they have been excluded from the competition with stock fed in the open air, and when shown it has been in a class set apart for that purpose.

The construction of sheds or pens best adapted for feeding sheep in will be the next matter for consideration. This is of the greatest consequence for various reasons, but more particularly now that the animals are prone to suffer from the epidemic lameness and foot rot. We frequently hear the home farmer say, Why should sheep be housed, as they have generally grown fat whilst in the fields if carefully fed? We concede this without hesitation; but our point is that they eat less food—a matter of no small importance when roots, &c., the produce of the farm, are scarce, as it is admitted by all that warmth, comfort, and quietude are large equivalents for food. As we do not allow our fattening bullocks to lie out in the pastures day and night eating roots, cake, &c., in winter weather, a reasonable question to ask is, Why should we not feed our sheep in the house as well as our cattle? The only answer is, Because it is not customary to do so. Which will return most profit? is not a question so easily answered, and the matter of fattening "bullocks *versus* sheep" under the like conditions will furnish us with an important subject in these columns at a future time. Upon the home farm we may not be willing to house all the sheep, therefore those which are required as store animals may be fed in the open field, and half or one-third of the root crop pulled and used under cover for both beast and sheep; the rest of the roots being fed upon the land with oilcake, &c., in addition, will always insure a full crop of straw or haulm in the succeeding crops, whether it be grain or pulse, and the land will be left in good condition, whilst the portion used in house feeding will have served its purpose for feeding fattening animals, and have left behind, under judicious management, a very valuable addition to the manure of the farm. Although this question may be worth consideration by the tenant farmer, it has a special claim on the attention of the home farmer, because sheep will be constantly required of good quality for killing and use at the establishment of the proprietors of estates, independently of those which may be kept and sold for profit.

(To be continued.)

#### WORK ON THE HOME FARM.

*Horse Labour.*—Horses can now only be employed upon the land in consequence of the changeable weather and frost; still the wheat sowing, of which there is more than the usual quantity at this period, must be done at every favourable opportunity, and especially is it desirable that the land should be sown or drilled as fast as it is ploughed. If the land is left over for a day or two with the view of sowing a whole field at once, rain or frost will interfere with the work, and it may be months before a fair seed time can be obtained. We have occasionally cautioned the home farmer against sowing wheat the produce of the last harvest as being bad policy, in consequence of the grain not having ripened in a natural way by the influence of the sun. The corn, during progress towards maturity, was killed by adverse weather; and we considered that the grain, being so thin and defective, would not in many cases vegetate at all, and if it did it must prove a very weakly plant and quite unable in some soils to maintain itself during the alternations of winter weather. We now find that our caution is justified, because we know cases in which the corn was early sown; and, although some of the seed did vegetate, yet it has died in the land in some instances, for, although it had power to vegetate, the mother grain could not nourish the young plant well enough to enable it to obtain a foothold upon the soil. It is therefore a serious consideration for the home farmer as to providing seed for the land not yet sown. We therefore recommend the seedling with some of the beautiful samples of foreign wheat which are now selling in all the markets, or otherwise to obtain wheat of the previous year's home growth if the sort required can be found. We have acted upon what we have recommended, and sown only wheat the produce of the harvest of 1878. There is also a great complaining amongst farmers that the rye and vetches have not vegetated in many instances; this, too, is no doubt in consequence



of the corn not having ripened and matured at harvest time. This will be a serious matter upon some hill farms in the spring of the year in a season like the present, when there is not half a crop of roots upon many farms, and especially on farms without irrigated meadows. The crops of Italian rye grass will in such a case be of more than usual value, and the ground should receive 2 cwt. per acre of nitrate of soda as soon as the weather is open, in order to forward the crop for feeding at the earliest period.

**Hand Labour.**—This will now be required in a variety of work, such as making out water furrows on the newly sown wheat land, filling dung carts, and spreading upon the clovers or meadow land after being laid out; also the same work connected with chalking the land, and also breaking the lumps of chalk, in order that it may be reduced by the action of frost and the more quickly become incorporated with the soil. Earth which has been carted on to the soft meadow land should be spread so that the first rains which occur may wash it into the turf. The shepherd will now be busy, as all his stock will for the most part, particularly the ewes, be cared for in the lambing yard and sheds. The fatting sheep in the field with ordinary attention will do well during dry frosty weather, but should receive a smaller quantity of root food, with a larger quantity of hay and cake or corn, the latter given as meal or crushed fine and mixed with cut roots. The young cattle in the yards and sheds will require something besides straw and roots, for in many cases the roots cannot be spared for them, being so much required for fatting cattle and sheep, and even these should have a diminished quantity, roots being so scarce this year. The straw in many cases this year does not possess much feeding quality. If, however, it has been harvested fairly well and is not mouldy we may expect it to be nutritious, because the straw did not ripen as usual, but was killed as it were in the green state, and the analysis of straw cut early and in an unripe state stands high for nutrition, so that we may expect the straw of this year's growth to be of fair feeding value, although often found of a dark colour. Straw should always be spiced at slaking or when chaffing, as it makes it more attractive to the animals. In the dairy it is important in the winter months to keep up the colour and quality of the butter, and when the cows are eating vegetable food it should be cabbage or kohl rabi in preference, with sweet hay and bran or maize meal mixed with them, and thin wheat of the present year's growth will answer with cotton cake in admixture. Apart from feeding it is a good plan to purchase a well-bred Guernsey cow just calved; her milk being so rich and high coloured will improve the butter considerably, for it is no use to expect butter of the best colour from root-feeding in winter unless the cows are all of the Channel Island breed. The feeding of horses for work on the farm is now of some consequence, for we cannot expect them to do so well when fed only on dry food; they should therefore have about 6 or 8 lbs. daily of carrots or Swedes grated and mixed with their chaff. The feeding of pigs at this time of year is usually with milk and meal; but we have often when milk has not been available, for the weaning calves sometimes require it, used carrots or mangold pulped, the meal being mixed with it, and the meal gradually increased until the month before slaughter, then we use all meal mixed as usual.

**SOUTH AFRICAN GUANO CAVES.**—Several deposits of valuable guano exist in different parts of the Cape Colony, the best-known being those in the Bird Island, in Algoa Bay, and on the mainland adjoining Saldanha Bay. These are chiefly noted for their large percentage of phosphates. A new store of guano of very different characteristics has lately been discovered in a series of caves near Montagu, Robertson Division, about 100 miles east of Cape Town, where it is estimated that about 400 tons are available for immediate working. The guano is described as being a light brown powdery mass, in which a number of solid nodules occur. It is perfectly odourless, giving out no trace of ammonia. The latter substance, however, is evolved at once if a small quantity of the guano be heated with burnt lime. The solid nodules contained in the guano are of different size, varying from one-tenth of an inch to an inch in diameter. They consist chiefly of ammonia-salts and of soluble phosphates. An analysis of the guano shows that it contains 68 per cent. of ammonia compounds, 16 per cent. of phosphates, and 2 per cent. of nitrogen. In the same caves are considerable quantities of salts, forming a crystalline mass, containing 83 per cent. of phosphoric acid, 11 per cent. of sulphuric acid, 15 per cent. of nitric acid, 19 per cent. of potash, and 7 per cent. of ammonia. This salt, though too acid for use as manure alone, is of great value as a material for making artificial manure, and, if mixed with a proper proportion of potash or carbonate of ammonia, would make a most valuable fertilising agent. The land containing these caves was lately offered for sale by the Cape Government.—(*Colonies and India.*)

#### WHAT IS THE BEST VARIETY OF FOWL?

"WHAT fowl would you advise me to keep? I am thinking I should like to keep some, and you know better than I do what are best." Such is by no means an infrequent query propounded

to the writer, and judging by answers to correspondents almost a standing dish to the editor of a poultry chronicle. I always answer my queries with another, "What do you want the fowls for? and afterwards, what sort of places have you to keep them in?" "Oh," says my friend, "I have a good yard, and there is the croft they can run in, and I can easily knock up a house for them in one corner, and I should like a few nice fowls." "Well, do you want them to show, or for market, or for ornament, or what? Because if the former you must fix upon some pure breed. You need not at first attempt to buy prizetakers, but procure some fair stock, and when you are well accustomed to them you can begin in earnest with something better; and you have always one advantage in breeding pure stock when of sterling merit—a certain proportion of your birds will realise what may be called fancy prices as prizetakers or stock birds. Your early pullets you can always dispose of in the autumn at satisfactory rates, and your worst are worth as much for market as mongrels to say the very least."

"Oh no," shaking his head, "I don't want to bother with prize birds; I should never get a prize if I showed, and nobody would give me more than killing price for them. I merely want some good fowls. I want some good layers, not those that are always sitting, but yet I should like to rear a hatch or two of chickens in the year; and I should like some good early chickens for the table, but not to have a great amount of trouble over rearing them, and the hens must not be flying over everywhere because of the neighbours' gardens; and I don't want your poor little things, but some good-sized, hardy, useful fowls, that will lay plenty of eggs when they are scarce and dear; and I don't want them if we have any to kill to be long-legged birds without any meat on their breasts. Now what had I better have?"

Our friend wants something not far removed from perfection, but this is not yet attained by any pure breed that I am acquainted with. We must have a cross to get all these good qualities, and of all the cross-breeds I know, none please me so well as the Dorking-Brahma or Dorking-Cochin. To breed these rightly obtain, if possible, an old-fashioned, short-legged, heavy-bodied dark Dorking cockerel (not the stilted cockerel of our show pens), and from three to six good-sized broad young Brahmas or Partridge Cochins. Their early-hatched pullets will lay in the autumn, and with care through the winter; they are good sitters and careful mothers, while for table unequalled, having the grand breast and white flesh of the Dorking, with a richness, especially in the Brahma cross, that in my opinion the pure Dorking is deficient in. The chickens are very hardy, and are ready for table in a very short time; they are easily kept within bounds, and are an ornament to any poultry yard. I have several by no means full-feathered from 13 lbs. to 15 lbs. per couple cockerel and pullet. I supplied a friend of mine with birds such as I describe about two years ago, Dorking cock and Partridge Cochin hens. Some of his pullets of last year began to lay last autumn, and have continued almost without intermission up to the end of last month, even during the greater portion of their moult. One who had a hatch of chickens in June began to lay about nine days after hatching, and continued all the time her chickens were with her, and up to the time I state.

The advantage of thus pairing two pure breeds is incalculably greater than merely turning a pure cock among a lot of mongrels. The plan is, keep the pure breeds and rear from them alone; kill the young cocks as soon as ready or convenient; sell off in early autumn the year-old hens, having plenty of early hatched pullets to take their place; or some of the year-olds may be kept another season, though time is sure to be lost during moult, but on no account be tempted to breed from them; or if you do, kill the progeny off for the pot, and do not encumber your yard with them. Do not be tempted to buy cross-bred fowls or eggs without you know they have been raised according to my instructions. A great portion of the so-called cross-breeds are worthless and sure to disappoint, but with the cross I describe satisfactory results may be anticipated.

The cross between the Black Spanish and Black Cochin makes a very useful fowl only second to the above; indeed with a little selection I consider, though I hardly dare say it, that they are scarcely to be distinguished from the Langshan. Either of these crosses are really first-rate, and combine in themselves almost every valuable property of the poultry yard.

Some persons, however, desirous of keeping fowls, have no grass run, only a small pen or yard. For their benefit I will narrate the following experience of successful poultry keeping under exceptional circumstances, and for the truth of which I vouch.

I sold a friend of mine six or seven Brahma hens and a cock; he placed them in a corner of his garden wired in, the space being about 4 yards by 5; with a few old boxes a roosting place was made, and also some nesting places. They laid well, reared chickens, and he kept adding to his stock till he had altogether ten or twelve hens. He changed his Brahma cock for a Dorking, sold the eggs from the cross in the neighbourhood with the best results, reared some of the chickens himself, kept a cross-bred hen or two, and at last quite six years after he commenced keeping fowls he sold the whole of his stock including the hens he first

purchased, having lost only one bird by death or otherwise during the whole of the time. The birds were never let out, but the ground was sloped so as to drain naturally, and fine ashes every few days were thrown over it; the bird were well supplied with water, had all the kitchen scraps, an abundance of green vegetables, and a minimum allowance of corn.—NORTH SHROPSHIRE.

## BIRMINGHAM POULTRY SHOW.

(Continued from page 454.)

**Bantams.**—Sebrights mustered eleven pens. Mr. Serjeantson was again first, this year with a nice pair of Silvers, good in ground colour and small; second a very good pair of Golden; in lacing we almost preferred them to the first pair, but they are far larger. White Rose-combed were better than we have seen them for some years; we have before noticed the cup pair, they are little gems. Second very good in combs, a little red in lobes. Black Rose-combed numbered eleven pens. First the little pair which won at the Crystal Palace; in the second pen a pretty very young cockerel. The Any other variety Bantam class was very small. Single-combed Cuckoos were first, and White Japanese second. In the Selling class were a pair of Cuckoos with rose combs, too cloudy, but otherwise pretty, entered as "Old English Cuckoo."

[We regret that the portion of the report referring to the Game classes was lost in transit through the post.]

### PIGEONS.

These were a grand collection—indeed, we do not remember ever to have seen them so fine at Bingley Hall. The quality of the Carriers was such as has never before been seen at the great midland counties Show, and the adult classes were undoubtedly very well judged indeed. In the young classes very neat birds were shown, but the awards were not well selected, the Judge evidently going in for small neat birds and leaving out those that most undoubtedly will make fine specimens in time. Of Pouters a large collection was shown. Some of the awards very much surprised many fanciers who know this class well; but taking the judging through there was not so very much cause for complaint, every one of the winning birds being of remarkably good quality. In Tumblers a splendid lot far outstrips all previous years at Bingley Hall. Four of the Almonds must have puzzled the Judge as to which to select. The variety Short-faces were equally as good of their kind as the Almonds, the awards being particularly good. Balds and Beards, Short-faced, also show great improvement in quality, and a matter of choice amongst the three winners as to which was the best; but we are glad to state as our opinion that there was no cause for grumbling in the actual awards. Muffed Tumblers were a magnificent class and also well judged, but we are sorry to say that many good birds must have been passed over in consequence of their owners attempting artificial improvement, thereby causing their birds to lose the chance they otherwise would have had. Barbs as a class were only poor; the cup bird, however, was remarkably good. The young class also poor, and several showed unmistakable signs of too old-fashioned an appearance. The Fantails were a good class, and the awards exceedingly well considered. We are pleased to be able to congratulate the Judge on having selected the three best out of so many good ones. The Trumpeters were the best we have ever seen at Birmingham. We are glad to see this, as this is one of the handsomest varieties of Toys of which we are possessed. Jacobins were good classes; the cupwinner, a Yellow, as near perfection as we could wish to see. The awards in both classes were very good. Turbits were very good, but we could scarcely agree with all the awards. We could not understand how a Blue, being chequered in body and having Kite bars, should with these defects win a first prize. Although no great lover of the Antwerps, we could not but admire so grand a display as was here brought out. We were sorry to see them placed in such a position as to make it impossible for any judge to give correct decisions, the birds being placed nearly on a level with the floor. It was hard work for even visitors to inspect the birds. The Dragon classes were also splendid, but placed in a bad light for the Judges to discover their points. Exhibitors have a right to expect that their birds are placed in proper positions in justice to themselves, their exhibits, and also the Judges. The Short-faced frilled varieties, also Any other variety, contained many beautiful specimens; indeed, it was a mere lottery in these classes as to which would win, there being so many good birds shown in them.

## WATFORD POULTRY SHOW.

THE annual Exhibition of poultry in connection with the West Herts Agricultural Society was held on Monday and Tuesday in the large Agricultural Hall. The *Dorkings* and *Turkeys* were the best classes in the Show, but the *Brahmas* included several noted winners, and the Dark birds were very good. The Light *Brahmas* were also good, but we thought the cup should have gone to the second-prize pen (Mr. Breeze's) rather than the first. The *Ducks*

were fair, the *Geese* good. Among the *Bantams* we preferred Mr. Leno's Sebrights to the Japanese that won the first honour. The pen of *Dorkings*, belonging to the Rev. E. Bartrum, that won the Dorking cup and the champion cup for the best pen were acknowledged to deserve their position, but the second-prize birds were also good, and the Silver-Grey class also contained a very fine pen. There was an excellent collection of *Pigeons*, which, placed in a good light, excited much interest. Mr. W. J. Nichol was Judge, and seemed to give general satisfaction.

**POULTRY.**—**DORKINGS.**—Coloured.—1, Cup, and Champion Cup, Rev. E. Bartrum. 2, M. Leno, jun. 3, Rev. H. R. Peel. *Ac.* Viscount Grimston. M. Leno, jun. *White or Silver.*—1, C. Snewing. 2, Miss A. Peel. *Ac.* W. J. Lloyd. Miss A. Peel. T. Part. E. W. Thomas. **COCHINA.**—*Purridge or Buff.*—1, G. B. C. Breeze. 2, G. H. Wood. 3, H. Sear. **BRABMA.**—*Footed.*—1, G. B. C. Breeze. 2 and 3, J. C. Langton. *Light.*—1, A. J. Thurlow. 2 and 3, G. B. C. Breeze. *Ac.* W. A. Toovey. **GAME.**—*Black-breasted Red.*—1, W. Ross. 2, J. W. Flitt. 3, G. Bentley. *Ac.* Viscount Grimston. *Any other variety.*—1, 2, and 3, J. W. Flitt. *Ac.* M. Leno, jun. W. Ross. **HAMBURGS.**—*Spangled.*—1 and 3, A. Bentley. 2, M. Leno, jun. *Pencilled.*—1, G. P. Pointer. 2, J. C. Langton. **BANTAMS.**—*Game.*—1 and 2, W. T. Ross. 3 and *Ac.* J. W. Flitt. *Any other variety.*—1, W. J. Lloyd. 2, Lord Chesham. 3, M. Leno, jun. *Ac.* W. J. Lloyd. *Miss Cuckoo.*—1, Mrs. G. Webster. **CREVE-CEURS AND HOUDANS.**—1 and 3, A. H. Longman. 2, Rev. H. R. Peel. **ANY OTHER VARIETY.**—1 and *Ac.* J. C. Langton. 2, G. P. Pointer. 3, C. H. Hulsh. **DUCKS.**—*Aylesbury.*—1 and Cup, Lord Chesham. 2, M. Leno, jun. 3, T. Hill. *Ac.* Col. Sim. Rouen. —1 and 3, W. T. Eley. 2, C. J. Thomson. *Any other Distinct Breed.*—1, Mrs. G. Webster. 2, H. Boucher. 3, Lord Ebury. *(East Indian).* *Ac.* M. Leno, jun. Mrs. G. Webster. P. Clutterbuck. *(White Call Ducks).* **GESE.**—1 and Cup, Charles Durham. 2, H. How. 3, J. M. Reynolds. **TURKEYS.**—*Norfolk and Cambridge.*—1, M. Leno, jun. 2, H. How. 3, C. Durham. *Any other variety.*—1, Cup, and 2, W. J. Lloyd. 3, C. Durham. *Ac.* R. Blackwell. **SELLING CLASSES.**—*Hens of any Breed.* *Price not to exceed £1 10s. per pen.*—1, C. Snewing. 2, W. Ross. *Ac.* Viscount Grimston. *Single Cock of any Breed.* *Price not to exceed £1 12s.*—1, G. Bentley. 2, H. How. 3, E. T. Dexter. *Ac.* Viscount Grimston. *(2).* *Pair of Ducks of any Breed.* *Price not to exceed £1 10s. per pen.*—1, M. Leno, jun. 2, J. Sharp. 3, Mrs. G. M. Peel. *Drake of any Breed.* *Price not to exceed £1 12s.*—1, G. Bentley. 2, Mrs. G. M. Peel. 3, C. T. Hollings. *Ac.* H. How. *Young Bantam Cock and Two Hens.*—*Prizes offered by Rev. E. Bartrum.*—1, A. H. Longman. 2, Mrs. G. M. Peel.

## VARIETIES.

It is now high time for those who wish to have early chickens to put up their breeding pens. We hope in an early number to give some hints on judicious mating. It often happens that expensive pens are bought at shows and put together indiscriminately, the result being failure, when the expenditure of far less money judiciously laid out might command success.

In our first article on the "Any other variety class" we dealt with Buff Polish. Curiously enough, within a week we observed one of the most beautiful pairs of the breed we had ever seen taking first prize at Birmingham in the said class. There were others far less meritorious, but by no means despicable specimens of the breed in the class, at a moderate price, so would-be fanciers of it might now have a chance of a pen to begin with.

POLISH are an exceedingly long-lived breed, and seem to feather well to the end of their days. The famous white-crested hen which Mr. Darby so long and so often showed successfully must have been at least ten years old the last time she was at the Palace, and, if we mistook not, the first-prize hen last week at Birmingham was none other than "Patty," which for many years won in the hands of the late Mr. Norwood.

SALES at Birmingham were by no means behind former years, in spite of the bad times. In *Dorkings* Mr. Burnell's Dark cock went for £18 7s. 6d.; Mrs. Lagan's White cockerel for £10, the same lady's White pullet for £5, and Miss Milward's Dark cockerel for £8. In *Brahmas* Mr. Kendrick's Dark cock (second) fetched £20, Mr. Ansell's cup cockerel fifty guineas, Mr. Percival's Light *Brahma* cock £21, Mr. Morris's Light cock fifteen guineas. In *Cochins* Mr. Swindell's cup Buff cockerel realised £20, Mr. Clatworthy's Buff hen twelve guineas, Mr. Percival's White cock £12 10s., Mr. Chase's ditto £25, and the same exhibitor's unnoticed cockerel ten guineas. In *Hamburgs*, too, some high figures were reached, a Silver-spangled cockerel, we believe, being sold for £21.

WE understand that the Committee of the Poultry Club have decided to give aid to shows which adopt the rules of the Club. At present it is to be in the form of the guaranteeing of prizes for classes which might otherwise fall through. The Committee of the forthcoming Wolverhampton and Shrewsbury Shows have applied for this aid, and in each case the Club guarantees the prizes of six classes to the amount of £8 10s. in each class. Of course, should the entries be large little or nothing will remain for the Club to pay; should they be small the promoters of the shows will not suffer.

WE wish the rule against divided baskets could be relaxed at Birmingham. Surely it would cause little trouble if birds of the same breed might be sent in the same basket properly partitioned. We saw with much regret that all Mrs. Forsyth Grant's birds had in accordance with this stringent rule been refused admission, and could not fail to sympathise with the vexation of having sent a number of pens from Montrose to Birmingham and back for nothing.—C.

A CORRESPONDENT of the *Agricultural Gazette* writes as follows relative to rooks and newly sown crops—Let me strongly recommend the following plan which I have practised for the

last five years. Get a sentry-box sort of structure made, costing from 7s. to 9s. As soon as your corn is sown, place it in the middle of your field and then leave it. No crows will venture near it, at all events for some time—probably not at all. If, however, some, more adventurous than others, should after a while begin to attack your crop, place yourself in the box, and on their alighting fire a gun out of the box, but without showing yourself. They will never trouble you again so long as your crop is in any danger. When done with for the wheat crop remove it to your Swedes (if you do not pie them), to which very serious damage is often done; it is equally efficacious there. It eats nothing, it does not come at pay night for wages, and will efficiently protect from 35 to 45 acres, if they are fairly level. Though living near several immense rookeries I have not spent 1s. in corn tenting, and have not had the least injury done to crops or Swedes since adopting the—Sentry-box.

—THE total harvests of Europe are computed by the *Bulletin des Haïles* at 984 million bushels in lieu of 1177 millions, the average yield, so that 243 million bushels will be required, of which America can furnish 165 millions.

—THE New York *Sun* says, a larger number of tubs or packages of butter changed hands in that market the second week in September than ever before. The exact number of packages sold is not known, but in round numbers it is not less than 175,000. A prominent firm in Warren Street sold 10,000 packages in one transaction, and the amount of money involved was \$65,000. The money paid to American shippers of butter in the course of the week's business cannot fall short of \$500,000. This butter is bought by agents for dealers in England and on the continent.

—THE fifth annual sale is announced of poultry from the celebrated yard of Lady Gwydyr. The sale takes place on the 17th inst., when three hundred birds of the different varieties of Brahmas and Black and White Cochins will be disposed of at the widely famed establishment of Stoke Park.

—THE gentleman who reported upon the Dark Brahmas for us at Birmingham asks us to mention that Mr. Lingwood's third-prize cockerel there was not, as he at first thought, the second-prize Palace cockerel, but the unnoticed Palace cockerel of the same owner.

—WE learn that splendid collections of roots are exhibited at the Smithfield Cattle Show by Messrs. Sutton & Sons, Carter and Co., Webb & Sons, and other contributors, including a fine collection grown by the aid of Amies' manure; but as the authorities of the Show failed to send us tickets we are unable to refer more fully to these and other exhibits.

—IN any future war in Europe not only the heliograph and the electric wire will be brought more fully than ever into play, but Carrier Pigeons, no doubt, will also be very largely used, especially when cities are besieged. It is therefore unsatisfactory to learn that a dispute is actually going on among judges of these birds as to whether a contemplated show had better take place at Paris or Rheims. If the birds were properly trained there ought surely to be no difficulty on this head; and if it be true that the Belgian Pigeons are generally taught only to fly in a south-westerly direction, and cannot be relied upon to go due south—as from Rheims to Marseilles—the sooner such a system of instruction is abandoned the better. At any rate, it would be well if English owners were to adopt a plan of teaching which would render it a matter of indifference to them whether the Pigeons were needed to fly to the north or the east. If Carriers are to be of any value they must be able to go in any given line, or it will not be difficult for, say, the besiegers of a town to take good care that no birds ever leave the place invested.—(*Daily Telegraph*.)

### HOW LONG DO BEES LIVE?

WORKING bees are meant for queens, and drones are different creatures, and both are treated differently in their cells, and in life, and at death. Working bees live nine months. Bees born in August and fairly treated live till May. Of this fact we have had ample evidence in hives that bred no bees between these months, and in hives that had drone-breeding queens. Given a good hatch of brood in a good hive in the month of August or September it were easy to tell how long that hive would live if no more brood were hatched in it. It would gradually dwindle and become weaker in numbers till the last hatch of brood reached the allotted span of life—viz., nine months, and then "go out." During the last few years statements have been made by various writers and teachers touching the length of the life of bees, which are misleading. Many statements could be quoted, let one suffice. "I must remind you that it has been ascertained that no worker bee lives longer than five months at any period of the year, and in the height of the busy season their existence is much shorter." This quotation is made from a recent lecture pretty full of good common sense and practical teaching. If working bees live no longer than five months it would be a difficult matter for British and American bee-masters to keep their stocks alive during the shortest of winters.

For the comfort and encouragement of all it should be well known that working bees live nine months.

During the spring of the present year, in April, I found that one of my best hives had a drone-breeding queen all winter, and guessing that the youngest working bees in it were about eight months old I gave it a fertile queen and fed it well. The result was that three patches of brood (working bees) were hatched before the old bees died. Thus the hive was saved and did as well as the rest of my hives. It is well known that the loss of bee life in summer is very great, but who can tell whether the loss is caused by natural death or by accident? If men or bees expose themselves to risk of life and are cut down it cannot truly be said that they reached the span of life and died natural deaths. The instincts of bees, their care for their young and their industrial habits, prompt them to leave home often during unsettled weather. On their way to and from distant pasturage they are often caught and destroyed by storms. They perish on the altar of their own industry by thousands and hundreds of thousands. But is this natural death? On high authority it is said that some "men shall not live out half their days," and it may be safely asserted that many and most bees are lost before they have spent half their days. In good seasons and in favourable weather the effective forces of hives are not lost rapidly—nay, rather they multiply rapidly and swarm frequently. Some seasons hives are brought home from the moors having lost eight-tenths of their bees in three weeks, and some seasons hives are brought home well filled with bees. We have known 8 and 10 lbs. of bees taken from hives after seasons of hard work on the moors, and in other years we have known hives of equal size and strength return with less than 2 lbs. of bees in each hive. In one season the bees were killed or lost by weather or accident; in the other they were not so destroyed.

Are the bees whose lives are cut short in summer, killed by hard work or by accident? This is the question—the point of consideration which we wish to leave open for the opinion of others. If asked for my own opinion I would say, "death by misadventure." Of all bees queens are the hardest workers and do the hardest work, but they are never exposed to the hardships of outdoor labour or the accidents of weather. Queens come to their end by natural decay, generally speaking, at the age of four years. Working bees, let me say once more, come to their end and die natural deaths at the age of nine months or thereabouts. Drones are not allowed to live out half their days. Some are killed in infancy, and some are permitted to arrive at manhood before they meet their fate.—A. PETTIGREW.

### COTTAGE BEE-KEEPING.—No. 1.

IT is now many years since a course of direct instruction to cottage bee-keepers has found a place in this Journal. Since then so great a stride has taken place in our knowledge of bees, and such great improvement in their management, that it seems only fair and reasonable that our humbler neighbours should have the benefit of them. I purpose, therefore, during the winter months to write a series of papers with the above heading, in the hope of re-awakening an interest in this branch of domestic economy (as it may fairly be called), and helping our cottage friends to make bee-keeping a success.

The last year has been so fatal to bees everywhere, in Ireland and Scotland as well as in England, that a general discouragement prevails among cottage bee-keepers. Many have lost every hive they possessed, and not a few, looking back upon the ill luck that has attended their management of bees for several years back, seem in despair, and feel inclined to relinquish bee-keeping. What if our farmers generally, who have had too much reason to complain of the bad times, were to resolve to act in like fashion? We should soon be in difficulties for the saving of dear life, famine would next winter be at our doors. But I cannot see that my farmer neighbours are taking less pains with their grain-sowing or dairy management than in former years for all the heavy losses they have sustained. They are taking care to supply their lands with manure, and their flocks and herds with good roots and hay, in faith and hope of better times. Why should the bee-keeper be less hopeful, or allow himself to give less attention to his bees? If indeed ill luck has visited him and nothing worse he has only himself to blame. Ill luck is usually but another word for utter neglect and carelessness. Why did his bees die? Why did he let the summer and autumn pass, and take no pains to help his bees by feeding them as he ought to have done, and as he fed his other live stock?

I begin, then, with this piece of advice to all intending bee-keepers. Resolve from the first that you will not keep bees at haphazard, and do not expect them to pay if you take no trouble about them. Make up your mind to fail sooner or later if you will not help them with sufficient food to carry them through the winter and early spring after a bad season such as that we have just passed through. A very little trouble and a trifling deduction from the profits of a successful season will be sufficient to save your bees from destruction, and to guarantee you a super-

abundant harvest of honey at no distant time, more than sufficient to recoup you a hundred per cent. on your outlay. Just imagine the vexation of many a bee-keeper next summer, when, as is probable, if it should turn out a propitious season, he sees his more careful neighbours' bees yielding hundredweights of golden honey, himself being out in the cold, and having nothing to show but a beggarly array of empty and decaying hives. "Feed me well," then, is a fundamental rule in keeping bees. Not less important and essential to success is the other half of the verse, "Keep me clean." How to feed I do not stop now to show. That will come presently, as also how to keep bees clean. I will only say here with regard to the latter, that the intending bee-keeper must make up his mind to attend to this as a matter of quite equal necessity. Hundreds of hives perish every winter for want of a little regard to their healthy preservation. Damp, mildew, imperfect ventilation, poisonous exhalations arising from external or internal decay or death, are fruitful causes of instantaneous outbreaks of disease inside a multitude of stocks every winter. Accumulations of dead bees on the floor-boards, and entrances choked up by these or other things, are the direct causes of dysentery and ruin, and most likely of foul brood, within a hive. Therefore, whoever purposes to commence or recommence bee-keeping must make up his mind to give attention to these things. Let a new era begin, and all the old carelessness be for ever done away. Then there is some hope of success, and a golden time will come to the cottager as well as to the wealthier bee-keeper.

These two points on which I lay such stress at the very outset of my papers imply, of course, that the cottage bee-keeper intends to take as much care of his bees as of his potatoes or of his cabbages. Talk of potatoes indeed in comparison of bee-keeping, which in these days has on the whole proved the most profitable? Numbers of cottagers this year have taken up actually a less quantity of potatoes than they put into the ground in the seed time. Estimate the cost of labour, and the rent of the ground, and the original value of the seed itself, and balance this with the losses of any bee-keeper in the neighbourhood, and which of the two has reason to cry most over his disappointment? I will take my own case. I have eleven hives which have given me no honey this year. They have cost me two hundredweight of sugar valued at £2 10s. The eleven stocks I consider are now worth at least 80s. a-piece, taking no account of the hives themselves. They will probably be worth a great deal more in the spring. This time last year they were worth 10s. a-piece less. So that I have actually gained £3 on the value of the stock after deducting for the cost of food. What potato grower can show a proportionate increase in the profits of his root ventures this year? But if I had let my bees die out for want of that £2 10s. worth of sugar I should have found myself £18 poorer than I am now; and if I chose to carry on bee-keeping on the same scale I should have to pay as much again for them next year, not to speak of the honey profits I may not unreasonably expect to get in the good time coming. A greater goose than the "penny wise" starver of his bees could hardly be found.

When will our cottagers open their eyes, and see what possibilities of improving their small incomes lie at hand and within their grasp? I and others have lectured, and written, and experimented before cottagers in various parts of England, but I can scarcely call to mind a single instance where a permanent success has followed the lessons given. There has been plenty of temporary interest shown in the subject, and not a few have been induced to keep bees for a time, but with very rare exceptions failure has been the result, and for no other reason than the want of continued attention and sufficient care of the new property they have acquired. Not in any case that I can recollect has the profit been anything like what it ought to have been. It has now come to this point with myself, that I have ceased to go out of my way to induce any of my poorer neighbours to keep bees, simply because I am afraid they will only lose the outlay which is necessary for them to make, and consider me as the cause of their disappointment and loss of money.

For all that cottagers will continue here and there to keep bees. In some parts of England they are more intelligent than in others. It is for such I write these remarks, in the hope that they will make a note of them and begin in earnest to mend their ways.—B. & W.

### OUR LETTER BOX.

**CANDY CAKES FOR BEES** (*Sylenus*).—The following is Mr. Raitt's recipe for making the cakes you require:—Boil in a common pot as much sugar as may be required, with as little water as will melt it—say half a teacupful to each pound of sugar. Keep stirring briskly for ten minutes or so; then try a few drops on a spoon, holding it in cold water. If it gets stiff enough to draw into a thread take the pan off the fire. The mass if now poured out would give a very thick syrup or clear barleysugar; but if stirred briskly in the pan for a few minutes before pouring out it will begin to thicken and granulate, and if now poured out and cooled will furnish a hard white cake in which there still remains so much water thoroughly incorporated that, though it will not melt and run down as barleysugar does, it is very easily dissolved by the bees. The flour—common wheat flour—is stirred in just before pouring out, a handful to each pound of sugar. The best form of cake is had by spreading a sheet of thin paper over a soup plate and pouring

about a pound into each. In ten minutes or more it may be lifted out and the paper taken off. The cake is then slipped under the quilt of a frame hive, or laid over the feed hole of a skep, and warmly covered up. Mr. Raitt has lately discovered that the bees will to some extent store the flour as they do pollen, but generally it will be found that it is all used at once by the bees for their own nourishment or that of their young. Should anyone fail to get a good hard cake at first, it can be re-melted and boiled a little longer. The flour now in it will, however, cause it to boil over very readily.

**QUEEN EXPELLED FROM HIVE** (*Sussex*).—In all probability your stock lost its old queen late in the autumn. The bees raised another from the brood, but all the drones having by that time been destroyed, she remained unfertilised, and has been cast out by her subjects. If this is the solution of your case, the hive must perish before next spring.

**MOVING A HIVE** (*O. B.*).—You cannot at any time move your bees a distance of 80 feet at once without subjecting them to much loss and injury. Wait until the spring, when the bees are vigorously on the wing, and then shift the hive gradually a short distance at a time, allowing between each removal a clear day of good working weather to elapse. On the first occasion of taking the hive out of the bee-house, stand it exactly in front of its previous entrance, so that the bees may become accustomed to its appearance out of the shed; after which, shift to the right or left, and a little backwards or forwards as the case may require. By these precautions you will lose few if any bees, but by attempting to move the entire distance at once the loss of bee-life will be very great.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Baromet. at 35 inches Level.	Hygromet- er.		Direction of Wind.	Temp. of Air at 1 foot.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1879.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 3	29.885	22.5	22.5	N.E.	34.4	29.6	19.6	42.7	14.5	—
Th. 4	29.397	23.1	23.4	N.E.	34.0	33.0	21.9	53.2	15.2	—
Fri. 5	29.599	23.7	23.5	N.	33.7	31.4	22.7	46.7	19.2	0.086
Sat. 6	29.960	27.6	26.6	N.	33.7	34.9	23.8	48.2	20.5	—
Sun. 7	30.490	18.4	17.9	W.	33.2	30.4	18.1	34.6	7.5	0.015
Mo. 8	30.471	24.4	24.0	N.	33.2	37.7	18.6	49.3	12.0	—
Tu. 9	30.604	32.4	31.6	S.E.	33.3	37.7	27.8	44.9	20.3	—
Means.	30.099	26.7	26.0		33.6	33.5	21.5	46.5	15.6	0.010

### REMARKS.

3rd.—Bitterly cold, but very fine morning; overcast in afternoon; clear fine evening. Lunar halo 11.30 P.M. till midnight.

4th.—Keen frost, bitterly cold N.E. wind, only a glimpse of sunshine in forenoon.

5th.—Light snow in early morning, bright, clear, and very cold; snow showers during the day; slightly warm in evening.

6th.—Cold, bright, and fine throughout; sun quite warm in forenoon; bitterly cold evening.

7th.—Intensely sharp frost early with much rime; slight fog in forenoon, but sun shining through it; warmer towards evening.

8th.—Slight snow in early morning, fine day, partial thaw; fine sky at sunset; cloudy evening.

9th.—Dark cloudy morning, fine day, sunshine at intervals; slight fog 4 P.M.; a few flakes of snow about 9 P.M.

Very sharp frost, but not of very exceptional severity, the minimum being 16° against 6° in 1880 and 1867.—G. J. SYMONS.

### COVENT GARDEN MARKET.—DECEMBER 10.

Our market has been so quiet in consequence of the late frost that there is scarcely anything to remark upon, the principal feature being the absence of vegetables and the temporary rise in their value.

#### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	2 6 to 4 6	Melons.....	each	0 0 to 0 0
Apricots.....	dozen	0 0 0	Nectarines ..	dozen	0 0 0
Cherries.....	box	0 0 0	Oranges.....	½ 100	4 0 12 0
Chestnuts.....	bushel	12 0 16 0	Peaches.....	dozen	0 0 0
Figs.....	dozen	0 0 0	Pears, kitchen.	dozen	0 0 0
Filberts.....	½ lb.	0 0 1 0	Pears, dessert.	dozen	2 0 4 0
Cobs.....	½ lb.	0 0 1 0	Pine Apples ..	½ lb.	1 6 3 0
Gooseberries..	½ sieve	0 0 0	Piums.....	½ sieve	0 0 0
Grapes, hothouse	½ lb.	1 6 4 0	Raspberries ..	½ lb.	0 0 0
Muscats.....	½ lb.	3 0 6 0	Walnuts.....	bushel	0 0 0
Lemons.....	½ 100	6 0 10 0	ditto.....	½ 100	0 0 0

#### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	dozen	2 0 to 4 0	Mushrooms ..	pottle	1 6 to 2 0
Asparagus.....	bundle	0 0 0	Mustard & Cress	punnet	0 2 0 0
Beans, Kidney ..	½ 100	1 0 1 6	Onions.....	bushel	2 6 4 0
Beet, fied.....	dozen	1 0 2 0	pickling.....	quart	0 4 0 0
Broccoli.....	bundle	0 9 1 6	Parsley.....	doz. bunches	2 6 0 0
Brussels Sprouts	½ sieve	3 0 3 6	Parsnips.....	dozen	0 0 0
Cabbage.....	dozen	1 0 2 0	Peas.....	quart	0 0 0
Carrots.....	bunch	0 4 0 8	Potatoes.....	bushel	2 6 4 0
Capicums.....	½ 100	1 6 2 0	Kidney.....	bushel	4 0 5 0
Cauliflowers ..	dozen	3 0 6 0	Radishes doz.	bunches	0 0 0
Celery.....	bundle	1 6 2 0	Rhubarb.....	bundle	0 0 6 0
Coleworts.....	doz. bunches	3 4 0 4	Salsify.....	bundle	0 9 1 6
Cucumbers.....	each	6 1 0 2	Scorzonera.....	bundle	1 0 0 0
Endive.....	dozen	1 0 2 0	Seakale.....	basket	2 0 3 0
Fennel.....	bunch	0 3 0 0	Shallots.....	½ lb.	0 6 0 0
Garlic.....	½ lb.	0 0 0 0	Spinach.....	bushel	2 6 4 0
Herbs.....	bunch	0 2 0 0	Turnips.....	bunch	0 6 0 0
Leeks.....	bunch	0 2 0 0	Vegetable Marrows	each	0 0 0

## WEEKLY CALENDAR.

Day of Month	Day of Week	DECEMBER 18—24, 1879.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.							
18	TH	Royal Society 8.30 P.M. Linnean Society at 8 P.M.	45.3	35.7	39.7	8 4	3 49	11 4	10 22	5	3 16	352
19	F		45.4	32.5	39.5	8 6	3 50	11 19	11 35	6	2 46	353
20	S	4 SUNDAY IN ADVENT.	44.1	35.6	39.8	8 6	3 50	11 33	morn.	7	2 16	354
21	SUN		44.1	34.0	39.0	8 6	3 50	11 49	0 46	8	1 47	355
22	M		45.0	32.5	38.7	8 7	3 51	0 5	1 56	9	1 17	356
23	TU		44.1	31.7	37.9	8 7	3 52	0 25	3 5	10	0 47	357
24	W		44.0	31.3	37.6	8 7	3 53	0 49	4 14	11	0 17	358

From observations taken near London during forty-three years, the average day temperature of the week is 44.9°; and its night temperature 32.7°.

## CHRYSANTHEMUMS FOR EXHIBITION.

**T**HAT the Chrysanthemum is a favourite flower at this season is admitted by all—indeed it may safely be described as the queen of autumn flowers. My acquaintance with Chrysanthemums is of long standing, and I well remember having had the part care of a lady's garden many years ago in which they were grown largely in the open border fully exposed and without any protection whatever; there they bloomed profusely, and the borders were gay with them, but the climate was more genial than this. It was at Teignmouth in sunny Devon, where the warm sea tempered the cold winds, and where the soil on the red sandstone cliffs is warm and rich, there almost without any special treatment they grew in huge brilliant clumps. From that day to this I have been an admirer and cultivator of Chrysanthemums; and I have always endeavoured to grow them well, for when imperfectly grown they are very disappointing.

The culture of Chrysanthemums is simple, and success greatly depends on attention to the plants during the growing season, and maturation of the wood previous to the period of flowering. Our friends in South Devon, I am told, can still grow and flower them under the protection of a warm wall, but to obtain Chrysanthemums in their fullest beauty we have to grow them in pots and flower them under glass. If, however, we can command sufficient artificial heat to exclude frost we are repaid by a supply of gay flowers from the end of October until the middle of December, and a few Japanese flowers may even be had later than this. The popularity which this flower has attained within the last few years is surprising; this fact is illustrated by the rapid increase of exhibitions all over England during November.

Cuttings are taken off as early as possible; but though I prefer the earliest, say about the present time, I do not object to cuttings taken during January and February. These are inserted in small pots, generally three or four cuttings in a 60-size pot. The soil employed is light, and contains a large proportion of silver sand. The pots are then placed in a cold frame, protection from frost being afforded. If cuttings are taken late moderate heat will help to forward them, but cuttings struck in a cold frame are sturdier and hardier than those that have been nourished in warmth. As soon as the cuttings are well rooted, which if inserted early will be about the end of February, they are potted singly and returned to the cold frame. The frame is ventilated on all favourable occasions; in fact, on mild days the lights are drawn entirely off. About April the plants will be benefited by a second shift, this time into 32-size pots, using a compost with more loam than at the first potting, and a small stick is placed to each plant, which assists the stem to grow straight and erect. Return them to a cold frame until all fear of frost is past, when they may be placed out on any open space. Opinions differ slightly as to the exact time for their final potting. About the last week in June is as near a fixed period as I can name, for very often a gardener has to be guided by circum-

stances, and frequently about this time there is much other work requiring to be done. For this shift employ a compost of two parts of good yellow loam, one part of well-decomposed manure, and sufficient sharp sand to make the whole porous. The pots should be efficiently drained, placing a layer of the roughest portion of the compost over the crocks before filling-in the soil. Pot firmly. My collection this year was not finally potted until the 12th of July, which I consider fully a fortnight too late, and I well remember a friend on passing by them as they stood in their small pots pleasantly remarking, "There is no prize cup to be obtained by those plants this year, Moorman!" Within two days the whole collection was potted, and produced plants and flowers which exceeded my expectations as well as those of my friend, whose kind rebuff at the potting time I have so often thought of. At the time the plants received their final potting they were placed along the side of a garden path open to the full midday sun, in which position they the more readily matured their growths. It is better, especially for some time after potting, to err on the side of not giving sufficient water than to saturate the soil, especially if it is slightly tenacious.

For untrained plants which are grown to supply flowers for cutting and exhibition, 8 or 9-inch pots are large enough. Careful watering and placing strong tall supports to the plants are all they require until about the 21st of August, when daily attention is requisite, for good flowers cannot be obtained without disbudding. In the majority of cases it is not wise to take the first bud that appears prior to this date, especially in strong plants. A second growth is made, and this should supply the flowers unless in very weak plants and some varieties. Until the middle of August the plants when grown in a natural manner without stopping have only one long straight shoot. At the extreme point of this growth a flower bud will appear. It is not this bud that it is advisable to retain, but the flower buds which will be found at the points of the three or four breaks that are soon made if the plants are in a good healthy condition. There are a few varieties which will throw fine flowers from the first buds, but in most cases they come coarse and rough. If the plants are allowed to break into growth a second time every shoot multiplies into three or four more shoots, and the flowers are generally small and worthless, so it is necessary to disbud freely from the three shoots made about the 20th of August, reserving the central bud which generally produces the largest and best-formed flower. By this time the pots will have become full of healthy roots, and the plants will be benefited by the application of stimulants. But what to give them becomes the question. Amies', Clay's, and Standen's patent manures, guano, sulphate of ammonia, &c., are all good, but they must be given cautiously. I find no better liquid manure for Chrysanthemums than the diluted drainings of the farm-yard and soot water, supplying it frequently and weak, and if at any time the surface of the soil appears coated over stir it with a stick. This will allow both water and air to penetrate it freely. About the first week in October the plants should be placed in a light airy glass structure; there they will advance rapidly into bloom, and will require



copious supplies of water. I continue supplying weak liquid manure all through this period. Many of the varieties with long petals, or more correctly florets, such as the Empress of India and the Queen, fill-up better in the centre by being tied face downwards.

The difference between some large flowers when seen growing on the plants and when arranged on an exhibition table is very remarkable. In the hands of a good "dresser" a flower which is large but coarse while growing is so manipulated that when set up on an exhibition board it appears neat, full, and solid. I will not now express an opinion as to whether it is right or wrong to alter the appearance of these flowers by "dressing;" it is sufficient for my present purpose to state that unless coarse flowers undergo a certain amount of manipulation it is useless to enter them in competition against "dressed" flowers of an almost equal size. Why Chrysanthemum flowers are not exhibited with foliage as grown, in the same way as we exhibit Roses, I do not know, except that we in a measure bow to the dictate of fashion, which is to set them up pinioned in wooden cups, on painted boards, all neat and trim. Nearly all societies allow flowers to be "dressed." This "dressing" is simply drawing out all short, curled, and irregular florets from the centre of the flower, which in most flowers are shorter than the outside florets; the remaining florets are regulated and the blooms placed in hollow cups, which draw the outer or long florets over the hollow centre. A neat flower is then produced. Many flowers, such as those of the Mrs. G. Rundle type, cannot be improved by dressing; these and a few others come by high cultivation so near perfection that the gardener's art cannot assist them further. These remarks apply principally to the large incurved varieties.

**JAPANESE.**—The rising popularity of this section of the Chrysanthemum is evinced by the numbers now in cultivation and the interest with which the general public linger around the collections staged at the various exhibitions. For years they have been looked upon by growers and florists as curiosities, but they are now becoming appreciated for their decorative value. They were first introduced by Mr. Fortune from Japan in 1860. I have grown almost every procurable variety, and there is very little doubt that had the late Mr. John Salter lived to experiment on this section a few years longer we should have witnessed some grand results. We seldom see fine specimen plants of this section; the best yet produced were some excellent standards exhibited by Mr. Brett at the Westminster Aquarium this autumn, which were very striking.

With respect to raising new varieties the credit is due to our continental friends, especially to M. Lemoine, for varieties supplied to nurserymen that have proved such acquisitions during the last three or four years. Some of the oldest varieties are still not surpassed in size and colour; there are others that are much too small for exhibition purposes, and are only worth growing to form a complete collection. For the future it will be a complete fallacy to say that they are so much later in coming into bloom than the other sections, for James Salter, Bouquet Fait, Elaine, La Frisure, Madame Lemoine, and Gloire de Toulouse are amongst the first to expand of all the sections. These are quickly followed by Fair Maid of Guernsey, Fulgore, Red Dragon, Fleur Parfait, Cry Kang, Hiver Fleur, M. Ardene, Nuit d'Hiver, J. Delaux, Bronze Dragon, Peter the Great, leaving Bismarck, Criterion, Plantagenet, Yellow Dragon, Madame Bertie Rendatler, Fulton, Mdle. Moulise, The Mikado, Meg Merrilees, and Grandiflora, &c., to bring up the rear. This list by no means exhausts the good varieties worth growing, but every variety named I can highly recommend for size, quality, and distinctness, as well as being all free and good growers, with the exception of The Mikado, which is a late-blooming variety. To those who are about forming a collection of fifty varieties the following may be added in addition to those already named, very many of them being of equal merit to those above mentioned—viz., Arlequin (Lemoine), Garnet, Abd-el-Kadir, Sarnia, Comtesse de Beauregard, Mad. Godillot, Baronne de Prailly, Ne Plus Ultra, Apollo, Ethel, Jane Salter, La Nymphe, Tendresse, Erecta Superba, Magnum Bonum, The Cossack, Dr. Masters, M. Crousse, Leopard, Red Indian, The Daimio, Emperor Nicholas, and Tokio.

Many other varieties I could name, but the above are all tried and well known, and without an exception can be grown to a size suitable for exhibition. In order to cut twenty-four distinct blooms on a given day it is requisite that many more varieties be grown than the number required, for it is impossible to cut twenty-four blooms distinct from only that number of varieties: some will have passed their best, while others

may not be sufficiently expanded. The diversity of forms in these Japanese flowers baffles the dresser's skill, except it be Elaine, which can be scarcely termed a real Japanese flower. Its size and chaste purity place it as one of the finest of flowers, and I should be sorry to see it displaced from this section; likewise Peter the Great, a very pleasing yellow, but almost bearing the characteristic of a badly incurved flower. Many other varieties have departed from the original grotesqueness so peculiar to the older varieties, and appear to display markings of a mixture of Chinese blood. But considering how closely placed the two countries are, and the sportive character of the Chrysanthemum, is it not probable that seedlings raised may vary in type without any particular attention being paid to hybridising? One very old and tried favourite of mine, Triomphe du Nord, has been for some years admitted in the same exhibitions as a Japanese and as a reflexed flower. I suggested to the Committee of the Kingston Chrysanthemum Society that it should be admitted amongst the Japanese and not amongst the reflexed, in which views the Committee concurred. This fact has given rise to some discussion on the classification of several varieties. It is a very good variety and does not disgrace a Japanese collection, while many newer varieties bear a great resemblance to the old Triomphe du Nord.

For a list of the best incurved varieties see page 31 of the *Journal of Horticulture* of January 9th of the present year, and refer also to the reports of exhibitions. Other sections of Chrysanthemums and varieties suitable for decorative purposes will be referred to on a future occasion.—J. W. MOORMAN.

### AGAINST HARD PRUNING.—No. 3.

VERY elaborate directions are given in the standard works on gardening for training Peach trees in the fan shape, and beautiful pictures are presented to us showing how they ought to be done. First, beginning with a maiden plant, it has to be cut down and so manipulated that it will produce two shoots of equal strength, which are to be employed as a basis for forming the two wings necessary to this mode of training. The second year these two shoots have to be cut back and be succeeded by four shoots—i.e., two on each side. The third year brings us to another decapitation; and then after the subsequent growth is made, when the fourth year will be dawning upon us, we shall be supposed to have six or eight regularly disposed equal shoots, and we shall call it a dwarf-trained tree. Such a one we can procure from a nursery for 5s. or 7s. 6d., and I am sure I do not envy the nurseryman either the trouble or the reward for producing such a tree. It is true there is not much to see for our money, but if any one of your readers has an idea that the charge is excessive let him try his 'prentice hand at the art, and starting by working a dozen stocks next year, if he succeeds at the end of 1884 in producing three well-ripened evenly balanced trees he will be tolerably successful. It is true the nurseryman sometimes gains a year by inserting twin buds or even two buds on opposite sides of the stock, and sometimes by encouraging three shoots on each side of a two-year-old cut-back. But I suspect all the gains in this direction will not compensate for the various losses; and when we take into consideration the great value of his land, his enormous taxation, the handsome salary of really skilful and trusty propagators and managers, with the many bad seasons, we are forced to admit that his productions are a marvel of cheapness.

We will suppose that few will care to wait four years before they possess the framework of their future tree, but knowing the object of their desire is already in existence and can be had for a reasonable sum, will prefer to dip their hands in their pockets and start at a point which, although requiring considerable skill, is not so difficult as the work already accomplished. Starting, then, with a dwarf-trained tree, it is generally recommended to cut it back hard for a year or two in order to enlarge the framework to get it into form for filling from 15 to 20 lineal feet of wall. Now, supposing we always had good seasons and the trees met with no accident, we might in the course of ten or twelve years have one or two trees out of a score which would fill their allotted space and approach pretty nearly the symmetrical picture in our instruction books. Indeed, with all the drawbacks of our climate I have seen one or two beautiful trees in my time, but what about their companion trees? I expect most of your readers know too well. Even those trees which did approach to something like the ideal picture did not long retain their symmetry, and all who

have studied the subject even superficially must have come to the conclusion that we have to wait a long time for results which when attained are far from satisfactory.

Well, then, as perfect fan-shaped trees are almost out of the range of possibility why all this cutting and waiting? If you will buy fan-trained trees do not cut them a bit more than is necessary for balancing them and removing unripe wood. The sooner they cover your wall with good moderate-sized growth the more fruit you will obtain; while the more you apply the knife the sooner will that decay commence which no amount of skill at present has been able altogether to prevent. But I do not consider either the Peach or the Apricot suitable for fan-training at all. They both abhor the knife; and if a tree when brought from the skilful treatment it receives in a nursery is ever so well balanced the knife has already done its work; and I very much question that if all the fan-trained young Peaches and Apricots in the kingdom were dissected and cut into pieces an inch long, there would be found one which had not a portion, however small, of its framework so much injured that it had commenced to decay. We know that the bark will grow over small portions of dead wood, and branches which contain such will even bear fruit for years if no severe check comes upon them; but under adverse influences they will succumb, and in pruning we often find traces of dead wood where it was not suspected.

Whether for indoors or out I prefer commencing with selected maiden trees, not overstrong, but well ripened, and which have never had a knife applied to them. The maiden stem is retained its full length, and as many of its laterals are laid in on both sides as there is room for without crowding. The trees are placed about 5 feet apart and upright. The laterals, which are to form the future main branches, are trained with their points a little the highest, and the usual disbudding and stopping is strictly attended to. There will be some blanks among the branches at the first training, but they will generally be sufficiently filled up by midsummer from a selection of the wood buds which start in great numbers from the main stem. The rest of the training will, I think, suggest itself to those who understand the mode of bearing of the Peach or Apricot. The stem and starting point of the main branches are similar to those of a horizontally trained Pear, but instead of being horizontal we aim to give the branches an angle of about 35°. Many trees so treated will bear a few fruits the second season after planting, and the third season they will cover a moderately high wall. This mode of training is the simplest I know of. It fills a wall very quickly, and the plants will be likely to last longer than cordons; for if we have a succession of fine seasons in store for us every other tree can be removed, and those remaining will extend without changing our mode of training. Fan-training can only be learned by actual experience. Most labourers and boys are very slow to understand it. It requires ten or twelve years to fill a wall, and that, I believe, is more than the average life of a Peach tree in our climate.

The three best successional Peaches are Hales' Early, Belle-garde, and Barrington. Among Nectarines the place of honour must, I suppose, be given to Lord Napier; but Pitmaston Orange is difficult to surpass for outdoor culture, and in dull seasons I am of opinion that the yellow-fleshed varieties retain their flavour better than the others. Violette Hâtive is one of the best for forcing.—WM. TAYLOR.

#### THE CULTIVATION OF THE AURICULA.—No. 1.

AT page 442 "D. Deal," mentions that Mr. Woodhead grows his Auriculas in glazed pots. He does not, however, state their size. For the information of those desirous of trying them, I may state that the pots he uses in no case exceed 5 inches in diameter at the top by about the same in depth. A large proportion of this space is occupied with crocks with fibre on the top, so that the amount of compost in which the plants are grown does not exceed 2 inches in thickness, and frequently not more than 1½ inch. In my experience of the Auricula, which extends over some thirty years, I have never seen plants do better than when grown in this manner. In no case do the plants appear to suffer from having so small an amount of compost to grow in, as after they have made their spring growth the plants are simply immense, more like Cabbages than Auriculas. These notes are not made from one year's observation but from a number, so that it is no new fact. The pots Mr. Woodhead uses are made at a pottery near his place; they are glazed on the outside, and to a depth

of three-quarters of an inch from the rim of the pot inside. This answers two purposes: the first is, the plants do not require watering so frequently as when grown in the common pots; the result is that the manurial salts are not so soon washed away by the surplus water. I believe it would be simply impossible to grow some varieties in common pots of the same size, as they would be continually suffering from want of water in hot dry weather. The only fault I can see in the pots is the glaze itself (the common brownware glaze), which in my opinion is too dark, and will be liable to absorb a great amount of heat if the sun happens to shine on the pots, more particularly the front row if the plants occupy a southern aspect. This, however, can be easily remedied by having a paler glaze, say a drab or buff, which can be obtained without increasing the cost.

With respect to Mr. Llewelyn's plan with offsets and seedlings, it is not new to me, as I used to plant all my offsets in beds the first year. It has, however, one great objection, and that is it is nearly impossible to clean the plants from aphides, as the leaves lie so close to the top of the soil; it is only by hand-picking that the plants can be kept clean. Where the collection of seedlings and offsets consists of six or seven thousand plants, as will be the case with Mr. Woodhead in the coming season, this would be simply impossible. The plan he adopts, and in my opinion it is far the best, is to grow his plants in shallow boxes 24 inches long and 8 inches wide by 3 inches deep, filling the boxes half full of crocks. A box of this size holds twenty-four plants. Boxes of this size are easy to move about, and can be placed anywhere conveniently. Mr. Woodhead has both frames and houses built to accommodate these boxes, and where the plan is uniform, as it is with him, it is an agreeable sight.

In conclusion I may say that Shobden Head is one of the latest places in Yorkshire, being 1000 feet above the sea level, the highest part in Yorkshire where florists' flowers are grown, —GEO. RUDD.

#### PROTECTION FOR FRAMES AND PITS.

DURING the last few years I have tried various protecting materials for frames or pits, and observed the practice of others in this respect; and though the present period of frost has passed away, there is no guarantee that the winter has ended. It thus becomes of primary importance to consider the best and cheapest protecting material. Mats are a protection against only a few degrees of frost. I have tried old woollen rugs, and on account of their texture and non-conducting properties they are much better. Snow I have allowed to remain on the frames containing Pansies, Auriculas, Carnations, Campanulas, &c. With about 18 inches of Oak leaves placed at the bottom of the frames that give but a degree or two of extra heat, and with dry hay—as fine as can be procured—placed over and around pits or frames, I have the following plants in good health at present, though my thermometer outside registered 14° of frost on two mornings during the past fortnight. Nothing is cleaner, more easily removed, and generally within the reach of all than hay. It must be remembered, however, it is not to be removed until the frost goes. Quite uninjured are Cinerarias, Primulas, Calceolarias, Petunias, Heliotropes, and Cape and other Pelargoniums, Fuchsias, Myrtles, Cytisuses, Coronillas, Daphne, Nerium Oleander, Passiflora cærulea, and Hoteia japonica. Although I generally find Justicias set down as stove plants they are among the healthiest-looking of those already mentioned. Acacias, Epiphyllums, and a large assortment of Tuberous Begonias I removed to warmer quarters before the frost, but believe they would have been equally secure. In such pits I start all my bulbs, and very healthy and forward they now look. Cyclamens are now flowering freely.—W. J. M., Clonmel.

THE WEATHER IN SOUTH WALES.—During the last ten days the weather has been very severe for this part, from 12° to 18° of frost occurring nightly. The greater part of October and most of November were characterised by finer weather than we experienced all summer, and we expected one of the old mild winters, but at present there is every indication of the weather being as severe as last season. We have not had any snow, but white frosts and cutting east winds have already done much injury to such tender vegetables as Cabbages, Broccoli, Spinach, &c., which are about half the size they were a fortnight ago. All the fine heads of the Hydrangeas have perished, but of course as yet nothing can be said as to what

damage may be done amongst the more tender shrubs, only I fear they are not in such good condition for withstanding frost as they were at this time last year.—J. MUIR, *Margam Park*.

### STORING GLADIOLI BULBS.

IN answer to "WYLD SAVAGE" at page 440 of your last issue as to the practice of lifting the Gladioli in autumn I should like to add my experience. When appointed to the management of these gardens my predecessor, a thorough practical man, left the bulbs in the ground with a covering of ashes over each cluster, naturally thinking they would be safe, but when the borders were dug over scarcely a trace of the bulbs was to be seen; they had all decayed in the ground. In consequence I had to obtain a fresh supply, which were blooming profusely till the first sharp frost cut them off. I had them lifted and laid in a cool house in leaf mould, and have now picked them over and stored them away in a box of sand till spring. So far as my experience goes I do not think it a safe plan to leave them in the ground during winter, and shall never adopt it. Ours is a wet stiff soil, about 18 inches deep, on a bed of clay.—THOS. PITTS, *Castlecroft, Wolverhampton*.

### THE NATIONAL ROSE SOCIETY.

THE annual general meeting of the above Society was held at the Horticultural Club, Arundel Street, Strand, on Thursday, December 11th. In the unavoidable absence of Dr. Hogg the Rev. J. M. Fuller was voted to the chair. Amongst the members present we noticed Messrs. H. Appleby, Dorking; J. Brown, Manchester; B. R. Cant, Colchester; Capt. Christy, Westerham; J. Cranston, Hereford; J. Cutbush, Highgate; C. Davis, Banbury; Rev. F. H. Gall, Hitchin; J. Laing, Forest Hill; J. Mayo, Oxford; J. W. Moorman, Kingston-on-Thames; G. W. Piper, Uckfield; G. Paul, Cheshunt; G. Prince, Oxford; W. Rumsey; T. F. Rivers, Sawbridgeworth; W. G. Sharpe, Horsham; J. T. Strange, Aldermaston; and the two Hon. Secretaries, Rev. H. H. D'Ombraim and Mr. E. Mawley. A letter expressing high appreciation of the objects of the Society was read from Mr. James McIntosh of Duneevan, who regretted that his delicate health prevented him attending the meeting. The minutes of the last Committee meeting were next read, which related the fixtures and places nominated for holding the Society's exhibitions for 1880, subject to the approval of the meeting.

The Rev. H. H. D'Ombraim said, with respect to the fixture of July 3rd, for holding their Show at the Crystal Palace, he had seen the Deputy Manager, and made arrangements so that the members of the Rose Society should be admitted to a private view half an hour before the general public were admitted, on condition that he undertook that the tickets were for members only, and not transferable.

Several members asked if the ladies that subscribed would be allowed the same privilege. It was unanimously agreed that they would, and thought it might be an inducement for many more to join the Society.

Two places had been suggested by the executive for holding the provincial exhibition for the ensuing year, Liverpool and Cheltenham being the places named. Mr. D'Ombraim said that he had put himself in correspondence with the above-named places, and that Liverpool had replied with many thanks, but were unable to entertain them. He believed that the rules of the Society not sanctioning two-day Rose exhibitions proved the greatest bar to Liverpool not accepting them. From Cheltenham he had received a point-blank denial, and failing both of these places he wrote to Manchester on the same terms as before, and mentioned the 17th July as the date of the Exhibition. Mr. Findlay accepted, but thought it too late, and named the 10th.

Mr. CRANSTON.—Then am I to understand that the idea of a moveable Society is abandoned for this year?

THE SECRETARY.—We have arranged for Manchester subject to your approval. The feeling of the last meeting was that it should be moved.

Mr. G. PAUL.—I think we are all agreed that it is desirable to remove it to some other place if possible. I think we ought to be a year in advance with a place, and ought now to be making suggestions and preparations for 1881.

The Rev. H. H. D'Ombraim thought that it would be very desirable if the members would use their influence privately in securing a suitable place for another year.

The question of Manchester for 1880 was then put to the meeting and carried unanimously. A discussion next arose respecting the date for holding the Exhibition at Manchester. Mr. Brown, speaking as a Manchester man, said that the 19th of July this year was found to be too early for Roses in that neighbourhood, he, therefore thought that the 10th of July would be too soon in ordinary years, he would have much pleasure in proposing the 17th. Mr. Paul seconded the motion, which was carried unanimously.

The following report and financial statement was read and adopted, which shows a balance in hand of £56 19s. 1d. :—

The season of 1879 will be long remembered by Rose-growers, as well as by all interested in gardening, on account of the disappointments caused by an abnormal character; it is therefore a matter of great satisfaction to your Committee that they are nevertheless enabled to congratulate the Members on the prosperous condition of the Society.

FINANCIAL STATEMENT.—In the last Report it was intimated that although there was an apparent balance in hand of £25, yet, that as regards of £80 continued still owing to five of the principal exhibitors of 1877, there really existed a somewhat large deficit. The Committee have now, however, the pleasure of stating that not only has this debt, on account of the St. James's Hall Exhibition, been entirely cleared off, but that at the present time there remains a clear balance in the Treasurer's hands of £56 19s. 1d.

PRIZE MEDALS.—Our prize medals have been much appreciated by the various societies which have availed themselves of the privilege of obtaining them. A list of these Societies, together with the names of the winners of the National Rose Society's medals, will be found appended to the Report.

SPECIAL PRIZES.—An unusual number of special prizes has this year been offered for competition at the Crystal Palace, and the Committee desire especially to thank those Members who have thus shown their generous sympathy with the objects of the Society.

MEMBERS' PRIVILEGES.—By the arrangements made for 1880 Members subscribing £1 will be entitled to one Member's ticket (not transferable) and four transferable tickets; and those subscribing 10s. to one Member's ticket (not transferable) and two transferable tickets. All these tickets are available for either of the Society's Exhibitions; but the Member's ticket, which is a new feature, confers the special privilege of admitting to a private view of the Crystal Palace Exhibition half an hour before it is open to the general public. Exhibitors at the Crystal Palace will each receive, as last year, a non-transferable pass, enabling them to leave and return to the Palace during the day.

More gratifying perhaps than even its financial success and the extent of its operations has been the recognition of the Society as the authority on all matters connected with the Rose, its culture and exhibition. The rules for judging have been largely used, while the concise series of hints on Rose-growing recently issued have also been much appreciated. Several Rose nurserymen, we notice, have introduced the latter into their catalogues for the present year. The Committee again look forward hopefully, feeling assured that their efforts on behalf of the queen of flowers will be heartily encouraged by the Members; and, in conclusion, desire to thank the local Secretaries for the able and zealous assistance they have given in making the Society more known and valued.

### BALANCE SHEET FOR THE YEAR ENDING NOV. 30TH, 1879.

	Receipts.	£	s.	d.
Balance in hand and at Bankers, 30th Nov., 1878	.. .. .	25	16	10
Subscriptions received	.. .. .	316	14	6
Donations—To Society	.. .. .	£	6	0
" " Metal Fund	.. .. .	20	5	0
" " Special Prizes	.. .. .	8	3	0
		34	8	0
Affiliation Fees from Local Rose Societies	.. .. .	8	8	0
Entrance Fees	.. .. .	5	0	0
From Crystal Palace Company	.. .. .	106	0	0
From Royal Botanical Society, Manchester	.. .. .	160	0	0
		£495	7	4
	Expenditure.	£	s.	d.
Printing, Stationery, and Advertising	.. .. .	36	6	0
Postage, Telegrams, Messengers, and Sundry Expenses	.. .. .	17	13	10
Railway, Hotel, and other Expenses, Crystal Palace Exhibition	.. .. .	7	13	6
" " Manchester Exhibition	.. .. .	6	6	0
Medals and Die	.. .. .	12	18	11
Accountant for Keeping Books, Preparing Balance Sheets, and other Services rendered for the years 1878 and 1879	.. .. .	8	8	0
Prizes—Crystal Palace Exhibition	.. .. .	161	13	0
" " Manchester Exhibition	.. .. .	135	15	0
" " St. James's Hall Exhibition, 1877 (arrears)	.. .. .	62	10	0
Balance at Bankers	.. .. .	£39	18	10
Cash in hand	.. .. .	17	0	5
		£495	7	4

Examined and found correct.

A. CHRISTY,  
GEORGE P. HAWTREY, } Auditors.  
WILLIAM SCOTT, Hon. Treasurer.

George Baker, Esq., Reigate, was added as Vice-President, the following being the revised list of officers and committee for 1880 :—President: the Rev. Canon Hole; Vice-Presidents, the Hon. and Rev. J. T. Boscawen, James McIntosh, Esq., George Baker, Esq. Committee: H. J. Adams, J. Appleby, J. H. Arkwright, R. N. G. Baker, H. Bensted, Rev. H. B. Biron, T. F. Burnaby-Atkins, Rev. J. B. M. Camm, B. R. Cant, R. B. Coker, Rev. A. Cheales, Capt. Christy, R. Cordell, J. Cranston, J. I. Curtis, H. Curtis, J. Cutbush, C. Davies, J. W. Finlinson, J. Forsyth, Rev. J. M. Fuller, Rev. F. H. Gall, T. Graveley, G. P. HawtreY, Dr. R. Hogg, J. Hollingsworth, T. Jowitt, L. A. Killick, J. P. Kitchen, Rev. H. W. Kynnersley, J. Laing, J. Lakin, Dr. M. T. Masters, J. Mayo, H. K. Mayor, J. Mitchell, W. Mount, W. Nevall, G. Paul, W. Paul, J. D. Pawle, Rev. E. N. Pochin, G. Prince, T. F. Rivers, S. M. Robins, W. Robinson, A. G. Soames, J. T. Strange, J. Tinsley, C. Turner, H. J. Veitch. Hon. Secretaries: The Rev. H. Honeywood D'Ombraim and Edward Mawley. Hon. Treasurer: William Scott.

Mr. G. PAUL.—I don't know whether it strikes any of you if there is anything conducive to the interest of this Society that this meeting should discuss?

Rev. H. H. D'OMBRAIN.—I think we ought to point out authoritatively whether Hybrid Teas ought to be exhibited among the Teas and Noisettes. My own opinion is that they should not.

The general opinion of the meeting was they should not be admitted, but at present there appeared considerable difficulty in settling the matter, so the subject was allowed to drop.

Mr. CRANSTON said that the best judges on the Rose should be delegated to adjudicate the class for the fifty-guinea cup, given by himself, which is to be finally won this next year. He should like if possible for that meeting to nominate two nurserymen Rose-growers and two amateurs, with the option of their calling in a fifth if needed. After some little discussion on this matter, which the meeting felt was important, it was ultimately agreed that the number of judges should be appointed, and as soon as they had awarded the cup prizes they were to return to the other classes allotted to them.

The schedules of prizes for both the Crystal Palace and the Royal Botanic, Manchester, were revised. The most important alterations were that in class 1, seventy-two, distinct, nurserymen.

Mr. John Hollingworth offered a ten-guinea cup; this is to be supplemented with a £5 prize also. Mr. Thomas Hollingworth offers a six-guinea cup which we understood was to be given for eighteen Teas. Mr. R. N. G. Baker gives a ten-guinea cup to amateurs, and Mr. G. Paul a cup of the same value to amateur growers for a collection of twelve varieties of Cheshunt-raised Roses. The "Journal des Roses" offers a silver gilt medal, which this meeting decided should be awarded for twenty-four flowers in eight trebles, one flower of each to be in its full beauty, the other as an opening bud, and the third a mere bud.

The most important addition to the schedule of prizes for Manchester was the making of an extra class for nurserymen residing within thirty miles of Manchester, which is intended to include Liverpool.

Cordial votes of thanks were accorded to the two Secretaries, Rev. H. H. D'Ombrain and Edward Mawley, Esq.; to W. Scott, Esq., the Treasurer; to Captain Christy, and G. P. Hawtrev, Esqrs., who had acted so ably as Auditors; and finally to the Chairman, the Rev. J. M. Fuller, for the able manner in which he had conducted the business of the evening.

#### PRESENTATION TO MR. D'OMBRAIN.

The CHAIRMAN then said, as there were some then present who possibly wanted to leave town, he had very great pleasure in presenting to their Hon. Secretary, the Rev. H. H. D'Ombrain, a testimonial as a slight recognition of the services Mr. D'Ombrain had rendered to that Society and to floriculture in general, and hoped that he might be spared to write a great many prize lists yet. The testimonial consisted of a most beautiful and chaste silver inkstand bearing the following inscription:—"Presented to the Rev. H. Honywood D'Ombrain, December 11th, 1879, with the affectionate regard of many friends, and in grateful recognition of the services rendered to floriculture by his writings and practical support, more especially to the Rose, by establishing the National Rose Society." There were two silver candlesticks to match and a purse of gold, the whole placed in an elaborate inlaid case. The list of subscribers to the testimonial contained amongst others the names of most of the leading rosarians, amateur and professional, in the kingdom.

Mr. D'OMBRAIN, after thanking all very kindly, said if there was any word he took objection to it was the word "establishing." He suggested the Rose Society, but did not establish it. The members subsequently dined together, and a most harmonious evening was spent, Captain Christy taking the chair. Notwithstanding the severity of the weather and the distance many of the members have to travel the meeting was well attended, as many as ten different counties being represented; this speaks well of the love for the Rose, even in the midst of intense frost and snow.—M.

#### SCHIZOSTYLIS COCCINEA.

In the conservatories at Oakholme, Sheffield, there is now a very fine display of this valuable winter-flowering plant. Mr. Hannah, the able gardener, has for a number of years past grown this plant remarkably well, and he expresses surprise that it is not more generally grown and appreciated by gardeners for the embellishment of the conservatory in November and December.

These plants, which are grown in 10-inch pots, have from twenty-five to thirty spikes of flowers, thrown well up above a mass of bright green and healthy foliage, and much resembling spikes of miniature Gladioli. Grouped amongst Chrysanthemums they are most effective. The mode of culture is to repot them in a good compost soon after they have done blooming, and to keep them in the pots all the summer, standing them out in a sunny place, and supplying them liberally with liquid

manure. He tried planting them out and lifting them again in the autumn a few years since, but found that plan would not answer in this northern district; he obtained healthy growths but few flowers.—W. K. W.

#### GOSSIP ABOUT CALOCHORTI.

HARDY herbaceous plants are at the present time very numerous, and when we hear the term "herbaceous" used we are reminded at once of its great elasticity. It includes weedy as well as good and showy species; and when you speak to some horticulturists about such plants your enthusiasm often receives a rebuff, and they say "weeds," forgetting most likely that many most attractive plants are included in that class. Now, we do not advocate the general cultivation of all known hardy plants, but if a careful and good selection is made we are bound to say that they will give as much pleasure and satisfaction as any plants, and amongst the most beautiful are the subjects of this paper.

In the Calochorti we include the species of the genera Calochortus and Cyclobothra, regarding, as is now the system, the latter as at the most only a sub-genus of the former, since the structural variation is so limited that it does not deserve generic rank. The chief differentiations in the genus Cyclobothra from Calochortus are in the outer or sepaline divisions of the perianth being bearded, by all the perianth divisions being furnished with a honey pit in the centre, which forms a gibbosity on the outside, and by the stems producing viviparous buds in the leaf axils. All the known species are found in Mexico, California, and parts of North-West America, growing usually in very arid situations, occurring both in valleys and on the sides of small hills and mountains, but always in dry places where the soil is exceedingly light and sandy, a fact which furnishes the cultivator with a good hint as to the best kind of soil to plant or grow them in. We know of no flowers more exquisitely and peculiarly coloured. It is difficult in some instances to describe the coloration of the flower. Take, for instance, the lovely *C. venustus*. They expand their flowers from May to September if a good selection of species is made. They are not of coarse and large growth, but in any portion of their existence above the ground they are handsome. Linnaeus considered their beauty in every respect when he designated them by the name of Calochortus, which means "Handsome Grass."

As to their cultivation it is easily described. They require such treatment as most bulbous plants require. The soil which suits them best is an equal mixture of good fibrous loam, peat, and sharp sand, planting them about 4 or 6 inches deep in a dry sunny position, and allow them to remain without being disturbed every season. It is much to their advantage to give them a good depth of soil with a perfect drainage, and then you may safely let them remain year after year, and without any protection they will always produce good flowers. Below we have given a list of the best kinds in cultivation, and if they are secured, and the bulbs good, the result will be satisfactory to the cultivator.

*Calochortus albus* (*Cyclobothra alba*).—A lovely species, growing about 1 foot high, with copiously branched stems bearing numerous pure white finely fimbriated flowers, which last a long time in perfection.

*C. citrinus*.—A recently introduced and grand species, taller than the last. The flowers are very large. The one we refer to measured about 4 inches across, erect, of a bright golden yellow ground colour, thickly dotted with small deep crimson spots, also covered with golden woolly hairs, and the edges of the perianth divisions beautifully fringed. This is truly one of the finest in the genus, and it is interesting to notice the large amount of variation, some of the flowers being margined in varying proportions with purple and crimson.

*C. elegans*.—This is a charming little species, growing from 6 to 9 inches high, with much-branched stems bearing several flowers, sometimes as many as eight or ten. The flowers are much smaller than those of the last, of a bluish purple colour, deepening towards the centre into a deep velvety purple, and the whole of the internal surface is covered in hairs, which gives it a peculiar appearance. This species sometimes flowers as early as May, and lasts a long time in bloom.

*C. ulacinus*.—This species also grows about 6 inches high, with the flowers umbellately arranged. The flowers are rather larger than the last, say about 1 inch across, of a dullish blue colour, and sparingly bearded.

*C. luteus*.—A very handsome kind of stronger and taller

growth, freely producing its bright yellow flowers, which vary considerably; some with blotches of a purple colour, others without, while some are sparingly hairy. It is a very hardy and beautiful species.

*C. pulchellus* (*Cyclobothra pulchella*).—A lovely species, growing about 1 foot high, with copiously branched stems, bearing several pendulous flowers of a bright golden yellow colour, freely bearded. This is one of the most floriferous of the set, and very charming. It commences to flower in May, and lasts till July very frequently. Plant it freely.

*C. macrocarpus*.—A very fine species, but as yet very scarce. It grows sometimes as high as 2 feet. The flowers are of a rich rosy purple colour, lighter towards the base, and copiously bearded with yellow hairs.

*C. splendens*.—This is one of the oldest known in cultivation, and undoubtedly one of the best. It grows from 18 to 24 inches high, bearing several flowers, which when expanded are quite 3 inches across, of a rich rosy purple colour, with crimson blotches at the base of each perianth division, and slightly hairy above the blotches.

*C. venustus*.—We think this was introduced about four years after the last (1836), and it is the showiest in the genus. It grows about 18 inches high, producing several flowers (from six to ten), which, as far as colour is concerned, are difficult to describe; they are 3 or 4 inches in diameter, with the upper part of the petals white, yellowish towards the base, terminated with a wedge-shaped heavy crimson blotch, also thickly dotted with crimson, and bearded; altogether the flower assumes a most peculiar and handsome appearance. There are several other species and varieties known, and are cultivated in limited quantities, such as *Gunnisonii*, *flava*, *flexuosus*, *Leichtlini*, &c., but those above described are the best.—T.

#### BOTHWELL CASTLE.

SEVERAL months since I paid an agreeable visit to this place, which is situated on the north banks of the Clyde in Lanarkshire, about eight miles from Glasgow, three from Hamilton, and not far from Bothwell Bridge, which was the scene of an engagement on the 22nd of June, 1679, between the Covenanters and the King's army, commanded by the Duke of Monmouth, assisted by Claverhouse and Dalzell. For many generations the place has belonged to the Douglas family, and lately has by legal descent and heirship come into the possession of Lord Dunglass. The present gardener, Mr. Andrew Turnbull, has been head gardener here for fifty-one years, and during this long term of service Bothwell Castle Gardens have borne a good character, and been considered one of the many well-managed places in Scotland. The character of the place has drawn many noblemen and gentlemen to Mr. Turnbull for trained men to manage their gardens, and many of the men recommended by Mr. Turnbull have been good servants and great ornaments to their occupation or profession. Both the Thomsons (William and David) were "slips" from Bothwell.

The old Castle of Bothwell is a very ancient and striking structure, probably the most magnificent pile of ruins that can be found or seen in Great Britain at the present time. Some of the walls are 15 feet thick, and some 60 feet high, and some are well mantled with Ivy, Clematis, Aristolochia, and wild plants clambering up and growing out of the walls. This grand old pile of ruins stands high and on a charming spot overlooking the Clyde, which runs past it in a deep valley of great beauty, the banks of which are finely wooded. Right opposite the old castle, on the Blantyre side of the river, may be seen the remains of an old priory built on the edge of a perpendicular rock, natural masonry rising right out of the river, and more than half hidden by the foliage and branches of trees. This old castle, giving grace to everything around it, looks on a scene of picturesque beauty and grandeur. What is worth mentioning here is the fact that Bothwell gardens and grounds are open twice a week (Tuesdays and Fridays) to the public. Those that go in by the principal entrance have to write their names in a book, and this is all that is required for admission. The whole place—including farm, gardens, orchards, pleasure grounds, and woods—contains about 700 acres, and is enclosed by a good wall about 8 or 9 feet high, save on the south side, which is bounded and well protected by the Clyde river. Considering that the gardens at Bothwell are extensive and looked on as "a show place," it is remarkable that in them there is a comparative deficiency of glass structures. Both the

kitchen and flower gardens are protected by walls 15 feet high, and the walls in the vegetable department are covered with fruit trees well trained and nailed, every branch, from its base to its point, running out about as straight as a gun barrel. In the kitchen garden there are two Pine houses and a Peach house, and underneath the Peach trees, which were carrying a good crop of fruit, stood a fine lot of well-grown Azaleas. In the flower garden there are two houses well filled with Camellias. This flower garden, containing probably from 1½ to 2 acres of land, is edged out in Box, and requires many plants to cover the large borders and beds. Dwarf Dahlias were largely used for filling the centres of the large beds. They were planted thickly, more than one hundred in the centre of a bed, with ribbons around them of Geraniums, Calceolarias, Perilla, Feverfew, Tropaeolums, Lobelia, and Violas. Generally speaking a ribbon of two or three colours only comes between the Dahlias and Box edging. The broad border, running the whole length of the garden, was well filled with large old Geraniums of various colours, and the 15 feet wall behind the border was covered, or being covered, with climbing plants to the top, chiefly with strong-growing scarlet Tropaeolums. In this way Mr. Turnbull contrives to make his flower garden in its season an unbroken mass of dazzling flowers. Being without much glass he has to resort to shifts of various kinds to get plants enough to cover the ground. Dahlias, which are largely used, can be wintered, like Potatoes, in sheds and cellars. His yellow Calceolarias are raised annually from seed, and thus from a pan or two of seed he can and does raise thousands of plants.

Outside and behind the walled gardens I saw two houses filled with Zonal Geraniums, but I did not go into them. I was more anxious to see the Heath house at Bothwell, which stands alone about half a mile from the gardens. For more than forty years the Heaths of Bothwell gardens have been objects of interest and admiration to gardeners and others visiting the place. Since I was last there the old Heath house has been removed and an elegant new one erected in its place. The Rose garden near to the Heath house has been remodelled and greatly improved in appearance. The plants in the Heath house—numbering probably about two hundred, and some of them 3 feet in diameter—we found in the heyday of their summer blossom and beauty. Many of the plants are seedlings Mr. Turnbull obtained by crossing well-known named varieties, and seemed to us to be improvements on the parent plants. All the plants were healthful, and the flowers covering them were charmingly large, clean, and wax-like. The Heath house is the gem of the gardens.

Another object of interest to me in these gardens was the old border of herbaceous hardy flowering plants, containing above seven hundred different kinds, all named and numbered for the benefit of the young gardeners who serve at Bothwell, and for their comfort and advantage there is a bothy for six men.

On taking leave of Bothwell gardens, and on taking a retrospect of all we saw in them, we could hardly tell whether the venerable old castle or the venerable old gardener had made the deepest impression on our minds. There we found Mr. Turnbull—after fifty-one years of active faithful service, aged 76—full of gardening instincts and youthful-like enthusiasm; and though by a great misfortune—viz., his connection with the City of Glasgow Bank—he has lost every farthing of his savings for half a century, everything but his clothes having been taken from him and sold, we were charmed with his pleasant smiles and conversation, his buoyant and hopeful spirit. In this one situation he has served several honourable and noble employers with credit and satisfaction, and it may be said that Mr. Turnbull himself, if not in blood, yet in heart and life, is a true nobleman.—A. PERTIGREW.

#### SEVERE FROST AT CHIRNSIDE, N.B.

THE unprecedented lowness of the temperature on the morning of December the 4th is worth recording. As to the accuracy of that registered at Blackadder I was myself incredulous at the time. I have, however, seen the land steward since, who assures me that the register thermometer has been tested besides others and found to be accurate. The situation of the garden near the river Blackadder and the nature of the soil render it peculiarly liable to suffer from severe frost. Indeed, Dahlias and other tender plants are usually killed there a month earlier than at other places. I have no doubt that the temperature recorded, 23° below zero, was accurate; on the opposite side of the river on higher ground at Allanbank



the thermometer indicated 13° below zero; at Ninewells, not more than a mile distant, 8° below zero; at Chirnside Bridge 6° below zero. We have had no frost compared to this since 1860, when 5° below zero was recorded at Chirnside Bridge. There were three deaths in this immediate neighbourhood from exposure to the inclemency of the weather in one week, and numerous cases of severe frostbite have occurred. I sent the temperatures at the time to the *Scotman* newspaper, and as I perceive that you have noticed them in the *Journal* with a note of interrogation following the lowest I consider it right to give you further information on the subject.—C. STUART, M.D.

### DODECATHÉONS.

I NOTICE in the *Journal*, on page 442, an article on Dodecathéons by "T.," who under D. Meadia mentions some varieties. A few years back in Prestwich near Manchester a Mr. Barlow resided, who raised a variety apparently between D. Meadia and its variety elegans, which seemed to be quite intermediate between both plants, and was sold out and grown in many gardens. Later on the same gentleman raised a splendid vigorous-growing white variety quite equal to elegans, but whether these two varieties are in existence now I am unable to say. I mention these, as I think your correspondent "T." has not seen them. I may also observe that the gentleman referred to raised Delphinium Barlowi, that good old herbaceous plant which has stood its ground for at least forty years, and is still one of the best border plants in cultivation.—JAMES PERCIVAL.

### ROYAL HORTICULTURAL SOCIETY.

DECEMBER 16TH.

THE last meeting of the Society in the year 1879 was uncommonly bright and interesting for such an unfavourable season. Although the exhibits were not very numerous, they compensated for that defect in their general excellence. Messrs. Cannell, Miles, Dean, and Ollerhead's contributions formed the bulk of the floral display, Grapes being extremely well represented by collections from Messrs. Atkins, Wallis, and Roberts.

**FRUIT COMMITTEE.**—Henry Webb, Esq., in the chair. On this occasion some excellent Grapes were exhibited; the immense bunches of Gros Guillaume from Mr. J. Roberts attracted especial attention. The Muscats from Mr. Goodacre were noticeable for their good form and high finish. Mr. J. Wallis, gardener to the Rev. W. Sneyd, Keele Hall, Stafford, sent a fine collection of Grapes, comprising eighteen bunches of six varieties. Lady Downe's were well ripened; Black Alicante, very good; Golden Queen, of medium quality; Gros Guillaume, handsome bunches, good colour and bloom; Gros Colman and Black Morocco were also well represented. A cultural commendation was awarded, and the Committee recommended the award of a silver medal. Mr. J. Roberts, gardener to the Countess of Charleville, Charleville Forest, Tullamore, exhibited two enormous bunches of Gros Guillaume Grape, which had been borne on one rod, and weighed collectively 42 lbs. A card affixed to the stand stated the same variety had in four years produced seven bunches, which in the aggregate weighed over 126 lbs. The Committee awarded a cultural commendation, and recommended a bronze medal. Mr. J. H. Goodacre, The Gardens, Elvaston Castle, Derby, sent two well-grown Smooth Cayenne Pine Apples; Mr. J. Coombes, gardener to J. Rolfe, Esq., The Hendre, Monmouth, also sent two similar Pine Apples, and each exhibitor was awarded a cultural commendation. Mr. J. Atkins, gardener to Col. Lloyd Lindsay, Lockinge Park, Wantage, sent twelve remarkably handsome bunches of Muscat of Alexandria, excellently finished, and fine in berry. The same exhibitor also staged nine dishes of Apples and two of Pears in good condition. For the Grapes a cultural commendation was accorded, and a silver medal recommended; and for the Apples a letter of thanks was sent. Messrs. Carter and Co. of High Holborn staged two large heaps of Potatoes, Magnum Bonum and Scotch Champion; the latter variety was cooked, and the Committee expressed their opinion that it is remarkable for resisting disease, and that it is a Potato of good quality. Mr. W. Hinde, The Gardens, Canford Manor, Wimborne, obtained a cultural commendation for a dish of excellent Tomatoes. On the conclusion of their duties Mr. John Lee proposed a vote of thanks to the Chairman, which was carried by acclamation.

**FLORAL COMMITTEE.**—Dr. Denny in the chair. Few plants were exhibited for certificates, the collections principally being composed of Pelargoniums, Poinsettias, Cyclamens, and cut blooms of Chrysanthemums. Mr. H. Cannell, Swanley, Kent, was accorded a vote of thanks for a large collection of Zonal Pelargonium blooms in excellent condition and extremely bright and well formed. He also sent six well-flowered plants of White Vesuvius and cut flowers of Dahlia imperialis. Mr. C. Green, gardener to Sir G. Macleay, Pendell Court, Bletchingley, exhibited a plant of the

distinct and pretty tufted Saxifraga valdensis, and cut flowers of Dahlia Maximiliana, a species similar in habit to D. imperialis, with pale purple florets. A vote of thanks was accorded. Mr. G. Wiggins, gardener to H. Little, Esq., Hillingdon Place, Uxbridge, received a similar recognition for a collection of incurved, reflexed, and Pompons Chrysanthemum flowers, which were distinguished by their neat forms and good colours for such a late period. Mr. J. Moorman, gardener to the Misses Christy, Coombe Bank, Kingston, was also accorded a vote of thanks for a collection of twenty-four cut blooms of Chrysanthemums, several of which were in good form. The best were Fulton, Madame Godillot, The Mikado, Princess Teck, and Hero of Stoke Newington. Mr. J. Osborn, gardener to H. J. Buchan, Esq., Southampton, was awarded a first-class certificate for a pretty Orchid, Oncidium Edwardi, which was bearing a panicle of small flowers with recurved sepals and petals of a purple tinge. Mr. W. Miles, West Brighton Nursery, Cliftonville, very worthily obtained a cultural commendation for a collection of plants of the Zonal Pelargonium West Brighton Gem, very dwarf, compact, and profusely flowered. Mr. H. B. Smith, Ealing Dean Nursery, Ealing, staged a very large collection of Cyclamens comprising about 170 plants, all in 48-size pots, vigorous, dwarf, even, and remarkably well flowered. The collection included many good varieties, and a first-class certificate was awarded for Baroness Burdett Coutts, of which the flowers were pure white, large, of great substance; the peduncles stout, and foliage prettily marbled. Mr. Ollerhead, gardener to Sir H. Peek, Bart., M.P., Wimbledon House, was accorded a vote of thanks for a large group of Poinsettias, including a variety named rosea that was exhibited with plants of P. pulcherrima to show its distinct character. The bracts appear smoother in outline and of a rosy scarlet tinge, which at a distance has, however, a somewhat dull appearance. Messrs. T. Jackson and Son, Kingston-on-Thames, sent a collection of new Japanese Chrysanthemum flowers not in first-rate condition generally. A first-class certificate was awarded for M. Lemoine, a flower of somewhat reflexed character, the outer florets yellow and the inner orange red. Mr. C. Noble, Bagshot, sent a flower spike of Lilium giganteum of extraordinary dimensions; it measured 18 feet in height and 11 inches in circumference at the lower portion, and had borne twenty-two flowers.

### NOTES AND GLEANINGS.

**RESPECTING SCALE ON FRUIT TREES.** "A KITCHEN GARDENER" writes, "As this is the time of year when an attempt is generally made to clean fruit trees of scale and other insects, let me ask those who have trees infested with these destructive pests to try the remedy of syringing the trees thoroughly with water heated to 140°. Mr. D. Thomson recommends this in his fruit book, and it is a remedy as effectual as it is simple. Some kind of engine is the most convenient to apply it with, as the water is too hot to do it with a hand syringe."

— AT a general meeting of the ROYAL HORTICULTURAL SOCIETY held on Tuesday last, Colonel R. Trevor Clarke in the chair, the following candidates were elected Fellows of the Society—viz., J. Hume Burnley, Mrs. Grigg, E. J. Jerram, Mrs. Linklater, Vernon Lushington, Major James D. Mackenzie (of Findon), Charles Wm. Morris, Henley Oliver Smith.

— ONE who has to prune and nail in the cold weather advises all who have to stand on the cold ground during the winter to wear CORK SOLES in their boots, as they not only effectually keep the damp from the feet, but they are warm and a great comfort to the wearer.

— WE learn that, from trees on a south wall in Grinkle Park Gardens FRUIT equal in quality to what it usually is there in September was gathered on November 11th, of Barrington, Malta, and Noblesee Peaches. From an east wall Coe's Golden Drop was gathered in good order on the 28th of November, and at the same date Pond's Seedling Plums were also excellent.

— THAT excellent late preserving and culinary hardy PLUM WYEDALE, which closely resembles Winesour, and is much grown in North Yorkshire, has not in the hill districts ripened perfectly, but in a semi-ripened state it makes good preserve, and in that state it has been much used this season.

— "I HAVE," writes "R. P. B.," "CHRYSANTHEMUM LA NYMPHE this year for the first time, and think very highly of it as a producer of flowers for cutting. Its colour is soft and pleasing, and the flowers are very freely produced and not over-large. Mrs. Dixon is another valuable variety for the same purpose. In addition to the above, Mrs. G. Rundle, Mr. G. Glenny, Elaine, Fair Maid of Guernsey, Julie Lagravère, and Venus, all produce large quantities of fine flowers for furnishing vases, &c."

— "A YOUNG PACKER" desires information through the medium of the Journal as to "the best mode of packing Grapes, whether in boxes or baskets, and about how many in each?" We will readily publish notes from those who can state their experience on the subject.

— MR. LAXTON writes as follows on the WEATHER AT BEDFORD:—"On the morning of the 2nd inst., at 8 A.M. the thermometer here at 4 feet from the ground registered 26° of frost; on the following night the lowest was 24° of frost, and during the night of Saturday last, the 6th inst., zero was registered. About 4 inches of snow fell on the 5th. Autumn Cauliflowers and Broccoli appear quite destroyed, and Tea Roses where unprotected are injured, but at the Experimental Garden the protection afforded by Pea haulm has saved a good many. The ground is, however, frozen hard."

— THAT fine ally of the Dracenas, *CORDYLIN INDIVISA*, is an old greenhouse favourite of very easy culture, so that everybody having such a house should grow one or two plants of it. That this is not done is probably owing to the fact of its only being seen at flower shows under the guise of large specimens requiring more space than could be spared in the conservatories of small gardens. It is readily obtained from seed, the seedlings becoming large enough for decorative purposes, in a year. We have not a more elegant plant for the dinner table, and with due attention to watering and sponging, small plants continue in good condition for a long time.

— AT the end of November many trees of the COMMON OAK in Sussex had, writes a correspondent, hardly shed a leaf and much of the foliage was still green. Frost, snow, and wind have at length laid bare the branches. The fact of this tardy defoliation is worthy of record, forming as it does another of a series of the extraordinary peculiarities of a gloomy dripping summer and autumn.

— CAREFUL attention is requisite to preserve FINE-FOLIAGE PLANTS in good condition at this season. Frequent sponging is of great importance, and as this requires much time advantage should be taken of any cessation of work in the open air during rain or snow to do as much of it as possible. Woodlice, slugs, and snails are also sad pests among foliage plants, and as they are invariably busiest at night it is an excellent custom to walk through the houses as late as possible to catch and destroy every one of the marauders that can be found.

— WE are informed that during the summer of 1880 a STUDENT'S GARDEN will be opened in the Royal Gardens, Kew, where, under special regulations, students will enjoy the privilege of obtaining specimens for botanical investigation.

— MR. COWAN informs us that much damage has been done by the FROST IN THE NORTH. Laurels (Common and Portugal) and *Aucuba japonica* appear much injured. It is stated that for a century the thermometer has not registered so low a temperature as 15° and 16° below zero, which it has done in several places near to Newcastle.

— THE Horticultural and Botanical Society of Durham, Northumberland, and Newcastle-on-Tyne held their ANNUAL MEETING on the 12th inst., the Treasurer of the Society (Councillor Gray) presiding. The Secretary (Mr. Gillespie) read his report, which was very satisfactory, the total receipts amounting to £2096 11s. 10d., including subscriptions amounting to £1188 13s. The election of officers took place, Mr. George Anthony Fenwick, Moor Lodge, Newcastle, being elected President. The Vice-Presidents were all elected again, with the addition of Mr. Lindsey Wood. Mr. Councillor J. Gray was re-elected to the post of Treasurer, which position he has filled for some years with much satisfaction to the Society.

— FROM several districts, including the North and West Ridings of Yorkshire, Lancashire, Dumfriesshire, and Derbyshire, we learn there is a general ABATEMENT OF FROST, and the snow has nearly or quite disappeared. It is too early to perceive the full effects of the severe weather, but we find that *Aucubas* have been killed in many places, and Portugal Laurels much injured. The thermometer at Croydon yesterday (Wednesday) morning registered 15°, or 17° below the freezing point, a dense and chilling fog prevailing.

— THAT indispensable Christmas ornament WELL-BERRIED HOLLY is abundant, but in common with other fruits the berries were much later than usual in coming to perfection. Frost set in before the colour was fully developed, and while the skin was tender caused quite two-thirds of them to turn black on many trees.

— ON account of the cold wet season our VEITCH'S AUTUMN GIANT CAULIFLOWERS were very late. On November 6th we carefully lifted the whole batch and planted them closely together in a Peach case where frost is only excluded, and they have amply repaid our trouble, for they have given us a good succession of fine heads, and I have reason to believe we shall have plenty to last into February. I shall plant an extra quantity another season and dispense with early Broccoli, as they are so much influenced by the weather.—J. L. JONES.

— *SOLANUM CAPSICASTRUM*, so generally grown in pots, should not be limited to that system of culture. This season, owing to a sunless summer, the plants are late and frequently bear but few berries, some only of which are coloured. We have fortunately a few planted out in odd corners of a greenhouse, and along the pathway under the stage. These are profusely covered with berries of high colour, and are a great ornament to the house, hiding as well tubs and soil. They have been of the utmost value for cutting from, and we recommend a place where this plant can grow freely year after year without renewal. It grows well against a wall.

— THAT magnificent Orchid *LÆLIA ELEGANS TURNERI* is now flowering finely in the collection of H. Wilson, Esq., Westbrook, Sheffield. This variety is yet very rare, and Mr. Clements, the able gardener at Westbrook, considers it one of the finest Orchids in cultivation.

— THE conservatory at NORRIS GREEN is looking wonderfully gay for the time of year. The side stages are "a blaze of bloom;" and the Zonal Pelargoniums in variety, which have been blooming so profusely for some time past, are still remarkably fine and produce an effect such as few winter-flowering plants can equal. These associated with early-forced Azaleas, Roman Hyacinths, Primulas in variety, late Chrysanthemums, Celosias, and many other plants, not forgetting that most useful of Orchids *Cypripedium insigne*, and *Euphorbia jacquiniæflora*, which gives to the whole a light appearance.

— SOME of the gayest flowers of Bromeliaceæ are to be found among the BILLBERGIIAS. *B. vittata macrantha* is unquestionably the finest of its genus; its zebra-striped leaves are arranged in long tubes with a spreading orifice, from which depends a drooping inflorescence composed of numerous slender flowers with a light pink calyx and a tubular dark blue corolla with three recurved petals. The beauty of these is further enhanced by their orange anthers, light blue stigmas, and the showy rosy crimson bracts at their bases. It is a native of Brazil, and at present flowering in the Kew collection.

— IT was decided at a meeting held at South Kensington on Tuesday last, that the Exhibition of the NATIONAL AURICULA SOCIETY be held on April 20th, and that of the NATIONAL CARNATION and PICOTEE SOCIETY on July 27th, both Shows to be held in the Royal Horticultural Society's Gardens at South Kensington. The Hon. Secretaries, Mr. E. S. Dodwell and Mr. James Douglas, submitted particulars of the financial affairs of the Society, which were extremely satisfactory. The Carnation and Picotee Society has a balance in hand of £21 8s. 10d., and the Auricula Society holds a balance of £12 4s. 7d. Special prizes will be offered for seedlings in all the classes, and also for species of Primulas.

— ANYONE provided with a moderately dry house with the ordinary greenhouse temperature might grow *CRASSULA LACTEA*. In summer it flourishes well in the open air, and in winter when housed produces its snowy panicles of minute starry flowers in profusion. Its habit is also interesting; its stout orbicular leaves being arranged in glossy green rosettes, so dense as to form a compact cushion. It is a native of the South African region where succulents abound.

— AT a meeting of the ROYAL BOTANIC SOCIETY held on Saturday, Col. Platt presiding, the Secretary reported the extremes of cold during the month. Skating in the Gardens so early in the winter has not been known for many years. Mr. G. J. Symons, F.R.S., reminded the Fellows that there had not been a warm month for two years, and that every month since August 1878 had been colder than the average. Besides being so cold the period had been characterised until the end of September 1879, by a most unusual deficiency of sunshine and excess of rain. The mean temperature of December, 1878, and January, 1879, were remarkably low, and yet the winter of 1879-80 has begun with lower temperature than its precursor. The actual minimum temperatures in the neighbourhood of London had been surpassed in intensity on some previous occasions—for instance on Christmas day, 1860, and again on

January, 4th, 1867, the temperature of the air at Camden Square fell to 6.7°, and the Christmas day, 1870, to 14.0°, while this year the lowest point was 16.1° on the morning of December 7th. The greatest severity of the late frost was, however, felt further north than London, and temperature below zero—i.e., more than 32° below freezing, had been reported from accurate instruments in many parts of the country. Mr. Symons said that most of the Fellows were probably aware how severe the weather had been on the continent. He read a letter which he had just received from a Fellow of the Meteorological Society sojourning at San Remo in the Mediterranean, who said:—"It may interest you to hear that the usually favoured shores of the Mediterranean have not escaped their share of the recent severe cold. A heavy snowstorm on December 1st has been followed by a succession of frosts of a severity unprecedented in this district. On December 2nd a thermometer by Casella registered 25° in a very sheltered part of Mentone, the snow both there and at Bordighera lying for two days close to the edge of the sea. The gardens all along the coast are terribly disfigured, and the Olives and Lemons, both of which promised an exceptionally heavy crop, are sadly cut up. In the Mentone Valley the Lemon trees seem all but killed, and various estimates put the loss of Olives round here at half to three-quarters of the crop."

—MR. J. H. STEWARD, of 406, Strand, writes—"It is a very interesting fact that the barometer, which had been gradually rising for the past three days, reached at noon to-day (Saturday) the remarkable height of 30.79 inches, after being reduced to mean sea level and 32° Fahr. This is the highest reading since February 18th, 1873, when the recording barometer showed a maximum during the day of 30.82, and on the following morning at 8 A.M. of 30.74 inches corrected reading, which was the highest for fourteen years previously. The temperature to-day is 13° warmer than at the same hour this day week (Saturday, 6th inst.)"

#### BRITISH FERNS.—No. 1.

FERNS are general favourites, especially our native species and varieties, many of which are equal in elegance to tropical forms, and it is the object of the writer in the following notes to point out such as are the most entitled to popular favour.

*Adiantums*.—The species *A. Capillus-Veneris*, or Maidenhair, is a well-known and generally admired Fern. The varieties are not numerous, the two most distinct and beautiful being *magnificum* and *A. aphnites*.

*Allosorus crispus*, or Mountain Parsley Fern.—This is pretty, and in great request among the lovers of Ferns who visit its native habitat. It is very plentiful in the Lake district, and is easily distinguished by its lovely green colour. The only variety is a crested one, said to be very good, which was found at Lethwaite by Mr. Nixon in 1874.

*Aspleniums*.—There are nine species—*A. Adiantum nigrum*, or Black Maidenhair (of which there are several varieties, but the only one I have seen worth remarking is *grandiceps*, a beautiful crested plant); *A. fontanum*, or Smooth Rock Spleenwort; *A. germanicum*, or Alternate-leaved Spleenwort; *A. lanceolatum*; *A. microdon* is said to be a variety of the last, but is very distinct; *A. marinum*, or Sea Spleenwort. I have seen several good and distinct varieties of this plant, but by far the best is the beautiful *cristatum*, raised I believe by Mr. Appleby of Doncaster, where I first saw it about ten years ago. It was a fine plant, and I was informed that fifteen guineas had been refused for it, though good plants may be now obtained for a few shillings. *A. Ruta-muraria*, or Wall Spleenwort—of this plant but few varieties have as yet been found; one or two crested plants have been collected. *A. septentrionale*, or Forked Spleenwort, not much in request except by the curious. *Asplenium Trichomanes*, or common Maidenhair Spleenwort, is a pretty little plant, and its varieties that we are acquainted with are very good. *Cristatum* and *incisum*, with others equally handsome and distinct, are well worthy the notice of amateur Fern-growers. *A. viride*, or Green Spleenwort, is a neat little plant but rather difficult to keep in health for any length of time; *multifidum* is the only good variety that I have seen.

*Athyrium Filix-femina*, or Lady Fern.—Of this the varieties are so numerous that we cannot say what the number is, but we may safely say it is not far short of five hundred; therefore we can only refer to a very limited number of the best. *A. F.-f. acrocladon* is very beautiful. E. J. Lowe, Esq., writing

of this plant, the original in Mr. Clapham's collection at Scarborough, says "that no word picture could do justice to it." He declared it to be a mass of the most exquisite foliage in the whole range of British botany. I had the pleasure of seeing the plant at Mr. Clapham's last year, but it was much reduced by being divided, as it is a barren plant and can only be increased by division. There are but few plants in cultivation. *A. F.-f. var. Craigii*—we believe that we are correct in stating that this plant was first collected by Mr. Barnes of Levens, in the Lake district, and afterwards by Mr. Craig, whose name it bears, he being the first to raise it from spores and send it out to the public. It is a beautiful, distinct, and well-crested variety, and a free grower—an ornament to any collection. *A. F.-f. var. crispum* is a general favourite. It was collected many years ago in Ireland, and is worthy of a place in any collection of British Ferns. *A. F.-f. vars. Fieldia* and *Frizellia*, too, are distinct and attractive varieties, and being of a slender and drooping habit are well suited for suspending in baskets. *A. F.-f. var. multifidum*, with many others of its kindred varieties, are finely crested and numerous represented. *A. F.-f. plumosum* (we refer to the Yorkshire plant) is one of the most beautiful of the non-crested varieties ever collected. Mr. Stansfield was one of the gentlemen who collected it and also sent it out into the trade. It is almost membranous in texture, exquisitely divided, and—as its name implies—feather-like in appearance. There is also another variety called the *Axminster plumosum*. This is also a grand plant, and as it becomes more generally known must command a first-class place in any collection of British Ferns. *A. F.-f. Pritchardii*, another plant sent out by Messrs. Stansfield, is very pretty. *A. F.-f. pulcherrimum* is also a beautiful variety, and well worth growing. *A. F.-f. Simpsonii* is a fine plant. It has a very dense and crispy appearance, and was gathered at Hapton in Lancashire. We will conclude our remarks on this class with that beautiful plant *A. F.-f. Victoriae*. This Fern has been in cultivation about sixteen years. It was gathered in Scotland, and we are not aware that a second specimen has ever been found. It is generally admired, and will always rank as a first-class plant.

*Blechnum Spicant*, or common Hard Fern.—Of this species there are not less than fifty distinct varieties, some very beautiful and commercially of great value, so much so that a plant found in the Lake district was sold or exchanged for the value of £5, and is now in the possession of Mr. Barnes of Levens. It has been named by Captain Jones, *paradoxum*. It has three rows of pinnae instead of two. Mr. Barnes has a fine collection of specialities. I had the pleasure of inspecting his choice and select stock twelve months ago, and I saw one form called *B. trinervium coronans*, plants of which he was selling at a guinea each. The following are a few others worthy of notice:—*B. S. Aitkinianum*, a charming variety; *B. S. Maunderii* is exquisitely beautiful, and only just being sent out by Messrs. Stansfield & Son; *B. S. cristatum*, *concinnum*, *imbricatum*, *robustum*, and others are very good and deserving of notice.

*Botrychium Lunaria*, or common Moonwort, is of no special importance to Fern-growers.

*Ceterach officinarum*, or common Scaly Spleenwort, is a little gem among Ferns, but one that is hard to succeed with in growing.

*Cystopteris*.—*Fragilis*, *montana*, and *regia* are the three species of this genus, but *montana* is by far the best. There are also several good varieties. *C. Dickiana* is a charming little plant and a free grower.

*Gymnogramma leptophylla*.—This is a small Fern, extremely pretty, and is the only annual species we have. It may be freely raised from spores.

*Hymenophyllums*.—The species *tunbridgensis* and *unilaterale*, or Wilson's Filmy Fern, are both attractive little Moss-like plants and worthy of a place in any fernery, but must be grown in a close and humid atmosphere if the grower wishes to see them in perfection.—J. EADON, Sheffield.

#### WEEKS'S PEACH HOUSE.

ANNEXED is a section and interior view of a Peach house which has recently been erected by Messrs. J. Weeks & Co. of Chelsea, in the gardens of Moor Park, Ludlow, the seat of Major Foster. The house is constructed on cast iron and slate foundations. The slate panels between the standards are about 1 inch thick, thus saving the greater part of the space usually occupied by the brick wall. The panels are also moveable, thus greatly facilitating the renewal of the border.



The lights and sashes are fitted with Weeks's improved ventilating apparatus, and the manner in which the house is constructed and planted is, we think, well worthy of notice. The rafters are placed rather further apart than is usual; and under each rafter, as may be seen by the view, is a Peach trellis, which runs across the house and forms an arch over the pathway.

The advantage of this method is, that it utilises the space and admits of a much larger number of trees being planted than is possible under the ordinary method of forming the

trellises. Another advantage is, that the back wall is not unduly shaded, and can therefore be wired and covered with trees, which will have a fair share of sunshine. A narrow shelf runs the whole length of the house on the level of the gutter, and close to the glass, for early Strawberries. The border between the Peach trellis is utilised by growing early salads on it. Although the house has not been long finished, and the Peach trees but recently planted, they have grown well and are in a most satisfactory condition. Messrs. Weeks and

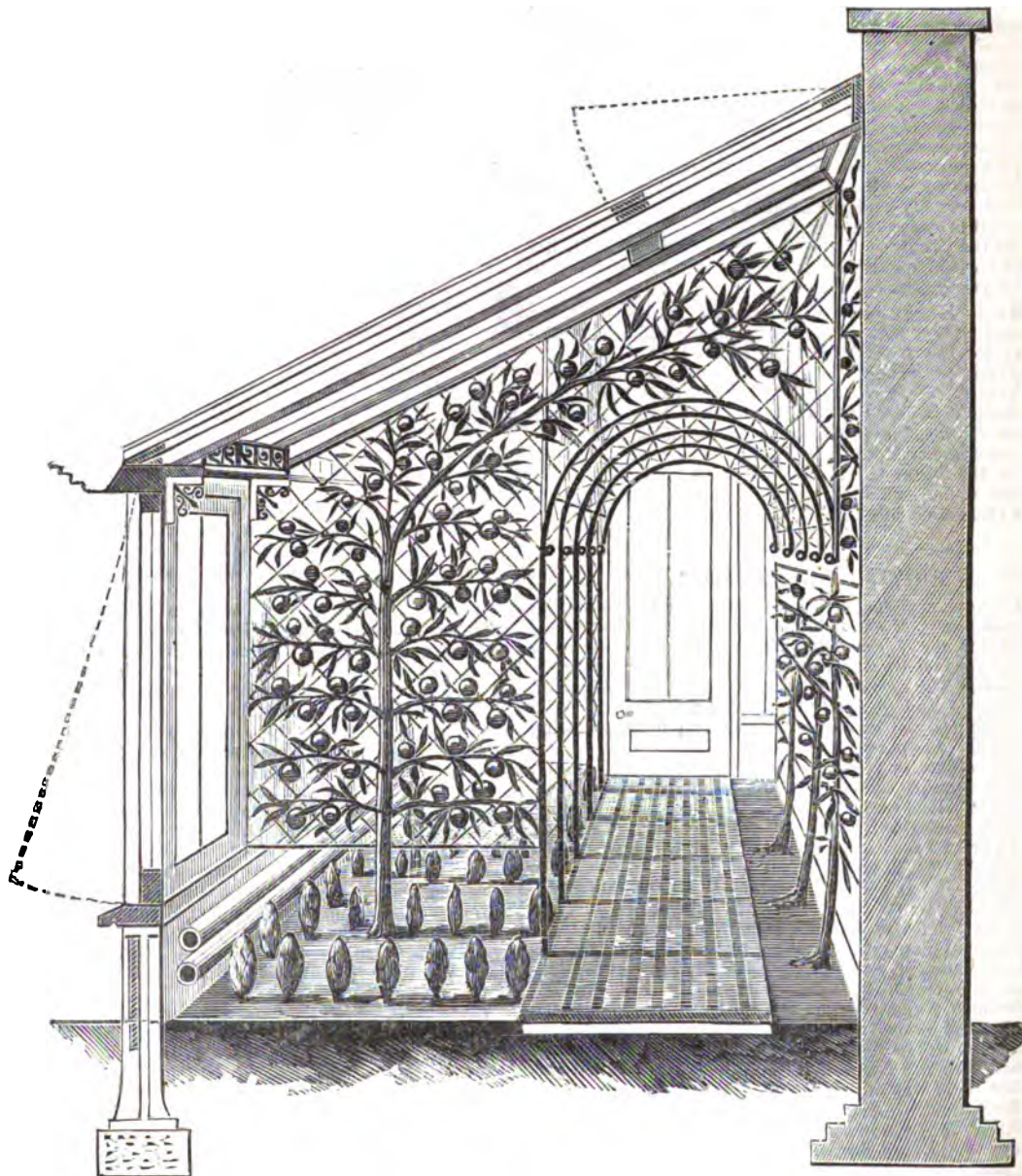


Fig. 47.—WEEKS'S PEACH HOUSE.

Co. have also erected similar houses in various districts which have given great satisfaction. In one which we inspected last summer, the Peach and Plum trees both on the cross-trellis and the back wall were bearing good crops, and the gardener spoke in the highest terms of the structure under his charge. Peach houses of this description combined utility with ornament in a very marked manner.

#### GOOD PEARS.

RANKING, as it does, as the most important of hardy dessert fruits, it is not surprising that such great interest is manifested

in the Pear. During the year now approaching its close we have received communications from nearly every district in Great Britain relative to the selection of varieties and their adaptability to various soils, localities, and modes of culture; and recognising the great number of Pears now in commerce, upwards of two hundred of which are in certain positions well deserving of culture, it is only natural that a somewhat widespread desire found expression for a "Pear election." A formal election, however, would inevitably have placed many valuable Pears in false positions.

There is a fundamental difference between an election of Roses and one of Pears. The majority of those who take part

in a Rose election grow all, or nearly all, the varieties of admitted excellence; but it is very different with Pear cultivators. Out of the aggregate number who would have sent in returns only a comparative few could have made their choice from a complete collection. Pears, further, are greatly influenced by soils and situations, and a formal election would have afforded no means of disseminating information on these and kindred matters of great moment affecting the several varieties. Of more real usefulness will be a full and free dis-

cussion of the merits and demerits of Pears of admitted repute in different districts and under conditions that can be named. In order to elicit information of practical value we propose from time to time to submit engravings of good Pears with the object of concentrating attention on them, and of others ripening at or about the same period. The figures to be given are of such fruits that we could obtain during the present unfavourable season. They will be represented as they were gathered from the trees, and will be truthful portraits of the

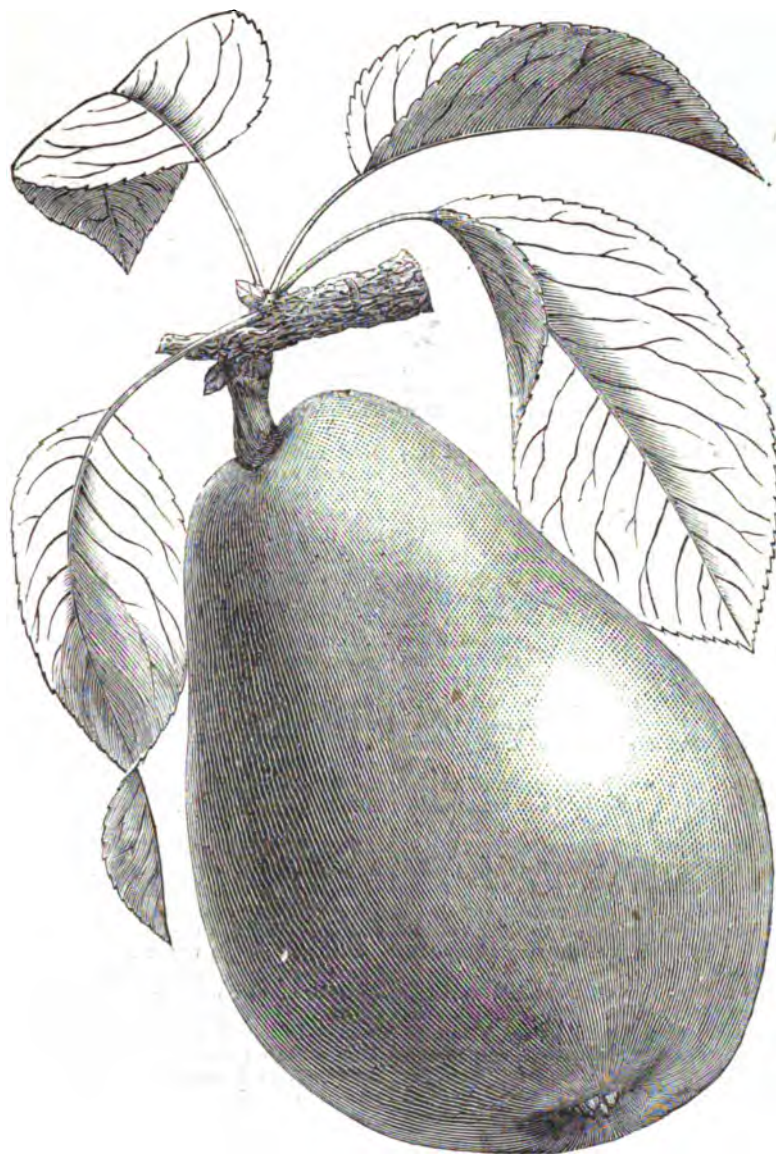


Fig. 48.—WILLIAMS' BON CHRÉTIEN PEAR.

varieties produced under ordinary cultivation rather than as showy specimens selected from dishes on the exhibition table.

Assuming that the variety figured, which is one of the best known of all Pears, ripens about the end of August during fine seasons in the southern counties (for it varies according to seasons and localities), it will be well to consider which are the most useful Pears that precede it; and also in what soils and localities and under what conditions Williams' Bon Chrétien fails to produce satisfactory fruit, and where and how it succeeds best.

Of the July Pears three may be named—the Amiré Joannet, or Harvest Pear; the Petit Muscat, or Small Cluster Pear; and the Doyenné d'Été, or Summer Doyenné Pear. As in the majority of collections only one of the three will be required,

the question follows, Which is the most useful? If more than one are wanted place the three in order of merit, naming the forms and conditions under which they give the best results.

August Pears are more numerous. Some of the best and most useful are the Jargonelle, Citron des Carmes, Bloodgood, Désiré Cornelia, Summer Rose, Beurré Giffard, Beurré Précoce, Souvenir du Congrès, and Beurré de l'Assomption. Information relative to these varieties, gained from experience of them in different districts, would be of service to many.

There are many growers of Pears who are able to contribute a small, but it may be a very useful, mite of information on the varieties, or some of them, we have named, who are not prepared to submit a selection of Pears from a large and complete collection; or they may possibly be able to name as worthy of culture other varieties in what we may call this



August list, although in some localities the varieties named may not ripen until September.

Of the old favourite figured we may observe that it was raised upwards of a century ago by Mr. Wheeler, a schoolmaster at Aldermaston in Berkshire, and was named by Mr. Williams, a nurseryman at Turnham Green, who distributed it. Our experience of this popular Pear is that in light soils in the southern counties, and in warm localities generally, it is an excellent variety for the north aspect of a wall. If grown in the full sun it ripens on the tree, its full flavour is not developed, and it is over in a few days. In stronger soils and cooler positions over a great extent of the country it succeeds as espaliers, pyramids, and standards. In more northerly and cold districts the shelter of a wall becomes of advantage, yet it is a very hardy and good grower, and if not a prodigious bearer it is fairly productive, and is altogether a very valuable Pear. What do others say about it?

Fruit of Williams' Bon Chrétien is sold annually by tons in the streets of London under the name of "William Pears," a name that is familiar to almost every schoolboy in the metropolis.

In communicating experience on Pears it will be additionally valuable if the nature of the soil and subsoil are stated; on what stocks the trees are grown or succeed best; the district, and its approximate height above sea level, with the average rainfall; if on walls, state the aspect; if in the open, whether sheltered by adjacent walls or distant hills or woods. Local conditions, which by long familiarity may appear trivial to the casual observer, exert much influence on Pears, therefore circumstances of the nature indicated should not be overlooked by those contributing information on this important subject.

Letters to insure insertion next week should arrive at this office on Saturday.

#### COST OF EXHIBITING ROSES.

I WOULD advise all aspirants to Rose-exhibiting to first weigh well the cost, and not to decide to enter on the campaign without serious reflection and much thought. I do not wish to dissuade anyone from exhibiting; my wish, on the contrary, is that many more would join us, and that each year should see the number of exhibitors increased, but I wish to save amateurs from disappointment, and, I may add, serious pecuniary loss. It is, then, in the most unselfish spirit that I give this advice. A man, then, who would be a successful exhibitor must be one who can afford to spend a considerable sum of money in the pursuit of his hobby.

If I am asked to name a sum which a rosarian should be prepared to spend on this pursuit, I hesitate not unnatrally from doing so, as I know full well the amount of dissent and discussion that such a statement would create, yet I will venture to name a sum. I do not, then, think that any person who wishes to show thirty-six distinct varieties, to say nothing of forty-eight, can hope to do so unless he is prepared to spend £100 on Roses, and the expenses incidental to their culture and exhibition. And this I maintain is a reasonable estimate, and I will try to prove that it is so.

(1.) A man who wishes to show thirty-six distinct varieties of Roses should at least grow sixty sorts. Why? Because on no given day could he depend upon having a good bloom fit for exhibition of thirty-six Roses if he confined himself to this number. Some Roses bloom much earlier than others. Monsieur Noman will be grand for the early Crystal Palace Show, but will be quite over for Hereford or Manchester. Teas, again, are rarely of use for the July shows, but are the greatest help in June. Marie Rady is glorious in July, but rarely in bloom about midsummer. He must, then, have at least sixty sorts, and (2ndly) he must possess twenty plants of each sort. No less number will suffice; and when I say that some of the great amateur exhibitors possess from two to three hundred of the leading sorts, I think it will be granted that twenty is a very small number indeed. This will give him 1200 plants, the cost of which may be put down at (including Teas) £60 if they are on the Manetti or seedling Briar, or £90 if they are standards.

It will be seen at once that if standards are purchased, £100 would be quite inadequate for his purpose. But supposing dwarfs are purchased, and most exhibitors rely on them for their best blooms (I do not wish to mention names, or I could cite two of the leading amateurs who have not a standard in their possession), £40 would be left. Of this £20 must be spent on manure. Of course the cost of manure depends in a

great measure upon the neighbourhood in which the exhibitor lives, but here I have to give £1 for every load of manure—i.e., 10s. for the manure, and 10s. for the handling; and on my small churchyard alone I have this year spent £24 in manure. There is not only to be considered the manure required to dress the land in autumn, but also the spring surface dressing and the liquid manure in the summer.

£20 is, if anything, too small a sum to be spent on 1200 Roses, but I wish to put everything as low as possible. There remains, then, only £20 for all the expenses of exhibiting the blooms. This may appear ample at a first glance, but is it too much? By no means. Let the exhibitor remember that he has to take his blooms by rail and road to such a place as the Crystal Palace; that if he has a large collection he must take his gardener with him; that he has expenses at all the junctions where he has to change, or if he is on a main line he has expenses at both ends. Then there is his own expenses and his man's, and when he arrives in London he must either take a conveyance direct to the Palace, which will cost him about 30s., including the driver, or he must take a cab to one of the railway stations, and go by train, and undergo the same expense again. I never showed Roses at the Crystal Palace at a less expense than £5, and I travel second and my man third class. Supposing, then, he shows at the Crystal and Alexandra Palaces, and Hereford and South Kensington, he will find that these four shows cost him £20. Against this there is the chance of prizes, but it is better not to reckon too much on them.

Next, exhibiting is somewhat selfish, and, unless the exhibitor is a bachelor, the cause of much bickering and heartburning. The plants have to be kept entirely reserved for the shows. No one must pluck a bloom, however near and dear she may be. Most extensive disbudding takes place. The plant is only allowed to grow three or four blooms, so that all the strength of the plant is thrown into those blooms. As often as possible the plants have to be drenched with the strongest liquid manure, and the smell from this stuff is quite frightful to delicate nostrils. Plants must be shaded in scorching weather, and the shades removed at night. The labour during the months of May, June, and early in July must be most assiduous, and the care and anxiety expended on the plants almost overwhelming.

There is always the danger of overdoing the stimulants; the guano may be put on too heavily by the man you put so much trust in, and the plants are burnt up and destroyed; or the foliage may be syringed on a June evening, when a sharp frost ensues, and cuts the foliage as if a hot iron had been over it.

All these and many other things should be considered by the would-be exhibitor, and if, after well weighing them, he finds that he is still eager to try his hand at exhibiting, by all means let him go in and win.

THE above is the article cited from Mr. William Paul's "Rose Annual" that a correspondent, "DUCKWING" (page 439) has thought fit to criticise, and in courteous language to condemn. I have delayed answering the stricture referred to until my article appeared in the Journal.

The case stands thus: A correspondent perfectly unknown to me has caused to appear in what is often called the Rose Journal, a letter which contradicts all that I, who have been before the Rose public for many years, have written upon the subject, with which I am better acquainted than any other. All I write on the subject of Roses is the result of long experience, and I never make any statement which I have not proved to be true.

"DUCKWING," however, simply contents himself with denying all I state. He gives no reasons, adduces no arguments, simply gives his *ipse dixit*, as if that was quite enough. Looking through his article I find that he gives advice so diametrically opposite to my own that I really do not know where to begin my refutation. Perhaps I had better discuss his statements in the order in which they appear.

First, "DUCKWING" assumes that I advise people to begin showing in nine months from this time at the great metropolitan shows. It was necessary for me to make mention of the shows which the would-be exhibitor would frequent, but I say nothing as to when he should begin. Your correspondent says that unless Roses behave very differently in his soil than they do in mine any attempt to cut a good box from Roses bought the first year will only prove a failure. Now my experience is totally opposed to his. All the prizes that I have won have been gained by Roses purchased the autumn before the shows. He also says that it would be absurd for an exhibitor to compete the first year at the great London and provincial shows:

that he must for a few years be content to show at small country exhibitions in his own neighbourhood. Must he? Well, I do not want to boast—I have never done so; but in justice to myself I am bound to add that the first year I showed Roses I went to the great exhibitions; that I was only defeated by Mr. Baker at Exeter, and that the next year I showed in two classes only at the Crystal Palace (36 and 24), where the competition was unusually great, and was first in both. So much for "DUCKWING" on these two great points. Mr. Jowitt was equally successful; he jumped to the first rank during the year of his *début*.

"DUCKWING" also calls in question all I say on the culture of the Rose. He disputes my figures, ridicules my estimate of the cost of manure, and disputes every statement I make. It would be too wearisome to your readers were I to go in to the question of the cost of Roses, for I write from an entirely different standpoint from "DUCKWING." He speaks of budding one's own Roses, and waiting a twelvemonth before a man shows a Rose. I advise cutbacks, and showing the next year. The cost is, of course, more; but it is far more gratifying to amateurs to have Roses at once than to have to wait for twelve months looking at stocks, to find that after all his labour and care 25 per cent. have not struck, 25 per cent. have been blown out, and the rest are poor miserable "ducklings," which require the greatest care before they cast him a good feather.

In conclusion I have to state that my article was not written for the Journal, and was not by me deemed suitable for the Journal's columns. The Journal may be taken to be *inter alia* the official paper of the exhibitor of Roses. A paper, therefore, written with the express object of warning young Rose-growers who may be intending to become exhibitors that they had better reckon the cost before they begin would, I thought, not be the kind of paper to suit the Rose Journal. With Mr. William Paul it is quite another thing. He represents the greatest non-exhibiting Rose-growing firm with which I am acquainted; and a paper written with the above-named object was most gratifying to him. He particularly requested me to write for him; I did so entirely as a friend, and I never contemplated for one moment that anyone would discuss my letter in the *Journal of Horticulture*.—WYLD SAVAGE.

SURELY "DUCKWING'S" reduced estimate of the expense of Rose-exhibiting is too high, and as I fancy some would-be exhibitors may be deterred by fear of expense I venture to send you my experience of the subject. For some years I have exhibited with fair success, though my maximum number of Roses has never exceeded five hundred. I bud yearly one hundred or thereabouts, and discard all old plants that are not doing well; but then I never attempt more than a twelve, or, if there should be such a class, six trebles. This requires three, or at the most four 12-boxes, which cost about 12s. 6d. each; tubes, 2s. 6d. a dozen. I never manure at planting time, but mulch with pig manure in the early spring. Last year I put on thirteen cartloads at 6s. per load, and this afforded a mulch some 5 or 6 inches in depth to about five hundred plants. How "DUCKWING" or any other man can dispose of £20 worth of manure on 1200 Roses exceeds my comprehension.

As to Roses planted in the autumn, my experience is quite contrary to that of "DUCKWING." Roses planted last autumn afforded me many prize blooms, including the premier bloom at one good local show and the second best bloom at another. From Roses planted in the spring I also cut a good box of twelve of one variety (Marie Baumann) with a little assistance from Briar maidens. In all, last year I was indebted for help in fourteen prizes to Roses planted in the autumn and spring. Certainly last year was favourable to newly planted Roses; but it has been my practice for years to transplant Roses budded on the Briar while still dormant, and this year I have adopted a similar course with those budded on the Manetti. I have never tried this before, so the success or failure of the attempt is yet to be proved. I quite agree with "DUCKWING" in one respect—viz., that nothing but experience will teach the perhaps most necessary point of all—i.e., the stage of growth in which to cut different varieties for exhibition, how to carry them to the show, and how to set them up.—KENTISH CURATE.

THE SEASON IN DUMFRIESHIRE.—We had our share of the hard winter of 1878-79, and occasionally frosty nights until the 27th of May, when we had 3° of frost, and on the

5th of June 1°. We escaped frost in July, but on the morning of the 26th of August the mercury was 3° below the freezing point, when French Beans and many tender bedding plants were blackened. On the 21st of September and 7th of October it fell to 5°. On the 21st of November we had 4 inches of snow, and on the 24th, 29th, and 30th of the same month the mercury registered 11° below the freezing point. On December 1st, 11°; 2nd, 21°; 3rd, 20°; 4th, 28°; 5th, 26°; 6th, 20°; 7th, 11°; 8th, 18°; 9th, 10°; 10th, 9°; 11th, 18°. As will be seen from the above, July is the only month that we have escaped frost during 1879. Strawberry plants seem to have suffered very much from the late cold frosty winds. The hardest frost we had here in 1878 was on the morning of the 13th December, when the thermometer indicated 2° below zero. At present we have every appearance of having a hard winter, and I am afraid that vegetation will not stand it so well this season as last. Owing to the wet summer, trees, shrubs, &c., are not so well ripened.—JAMES DICKSON, *Arkleton*.

### BRYNKINALT,

THE SEAT OF LORD HILL, TREVOR.

BRYNKINALT is situated about two miles from Chirk station and about twenty miles from Chester, and is reached by rail from that city. The estate is an extensive one and the gardens are large. The park is of great magnitude. The surroundings of the mansion are picturesque, being undulated and well wooded. Especially noteworthy are the trees in the park, which have been either thinly planted or timely thinned, and have developed into grand specimens.

The mansion is reached by a winding drive leading through the park from the village of Chirk, and is about a mile and a half in length; it is also approached by another main drive from Brynwillan near St. Martin's, which is about two miles in length. This we believe to be the most picturesque, leading as it does through a hilly district and avenues of fine Oaks. The mansion stands on an elevated site, and covers an acre of ground. It is a noble and imposing structure, and has been built at different times. The oldest portion was erected in 1609. Fine additions have been made of more recent date until it attained its present size. Close in the valley below is a small rippling stream winding its course with much beauty, and adds materially to the view from the mansion.

The pleasure grounds are elaborate, varied, and comprise about twenty acres. There are three flower gardens in different parts of the grounds and of entirely different designs. The one on the west of the mansion was laid out by Charlotte Viscountess Dunganon in the year 1808, as well as the surrounding grounds. This is employed for subtropical bedding, which this year has proved anything but satisfactory in consequence of the extremely inclement season. The principal flower garden is some distance from the Hall. The design of the garden is a scroll pattern on each side of the walk, with large circular beds in the centre, with beds of the Shamrock pattern round them. The bedding, when we visited the garden in late summer, was very creditable, there being an even balance of beds of flowering plants and others devoted to carpet bedding. A very fine border of Roses with a Peach wall at the back attracted notice. The Peach trees were good and well trained, carrying a fair crop of fruit ripening much better than we could have anticipated. This border contained a fine row of *Tritoma Uvaria grandiflora*, producing thousands of brilliant spikes, which were very striking. We next passed between two large ribbon borders, the front portion of which was planted with the usual flowering plants, and one row of Dell's dark-leaved Beet on each side, which contrasted admirably. The two most striking rows were at the back, one being composed of Hollyhocks of different shades free from disease, and Sunflowers planted alternately. The other row was composed of Phloxes of different varieties alternately planted with Dahlias, the effect being gorgeous. These borders lead direct to the main range of houses. The number of bedding plants required is ninety thousand, and the accommodation to grow them is most limited.

The glass structures are not extensive: they are nine in number and mostly heated with flues, with the exception of the greenhouse. There are three vineries, in all about 104 feet long and 14 feet wide. Some of the Vines are old, while others are young, none of which are in the most vigorous condition owing to the heavy crops they have previously produced. The fernery contained clean well-grown plants. The Cucumber house was planted for winter work, and the stove was well

filled with plants of a suitable size for table and other decorative purposes, no attempt being made to grow specimens; the plants were clean, healthy, and in capital order. The greenhouse is devoted to growing flowering plants for cutting, and to furnish the verandah, which is situated at the front door of the mansion, and is kept gay with seasonable flowering plants. The conservatory also joins the mansion and is principally planted with Camellias.

The kitchen garden is a walled enclosure 7 acres in extent. It is divided in the centre where the houses are situated. The garden is square, having a walk all round, and borders next to the wall 16 feet wide. It is divided into a number of squares by cross walks; the walls are covered with well-trained trees in good bearing condition. The ground was clean and well cropped, containing large breadths of Savoys, Brussels Sprouts, and Broccoli of sorts—thousands of such varieties as Snow's Winter White, Veitch's Self-protecting, and Autumn Giant. Suttons' Late Queen Broccoli was worthy of special note on account of its compact and dwarf nature; other late kinds and winter vegetables generally were also planted in quantity.

The Rose garden merits brief notice. It is on the north of the mansion, and is sunk some 2½ feet below the surrounding ground level, the design being a scroll pattern and Shamrock-shaped beds planted with standard Roses, the vacant places and groundwork being filled with Mignonette and other similar plants. In the centre is a large circular trellis and Roses trained upon it. This, and the surrounding grounds were laid out by the present owner. The gardens in all departments were in admirable condition. They were at the time of our visit under the charge of Mr. W. Cook, who, we regret to hear, has since resigned his position, but we trust he will soon meet with a charge equal to his abilities.—B. N. G., *a Visitor*.

#### THE EFFECT OF FROST ON HARDY FRUIT TREES.

MR. WITHERSPOON, on page 462, attributes the general failure of the hardy fruit crops this year to the severe weather of last winter, and appears as if he rather desired someone to differ from him in his theory. I will try and oblige your correspondent, but on the express understanding that my remarks will apply to fruit trees generally, and not to Mr. Witherspoon's exclusively. If the pith of the fruit trees referred to was blackened by the frost, that is quite sufficient to account for their barrenness, for when the wood of the spurs is in that state I take it to be impossible that they can support the fruit that may even apparently set after the flowering period. An exposed and northerly position has unfortunately more than once afforded me an opportunity of observing the results of trees frozen in the manner indicated, and I never knew fruit to follow injury so extreme. So far I agree with Mr. Witherspoon; but when he suggests that the loss of the crops generally is attributable to frost in winter I am bound to differ from him. But before I state my reasons for so doing, I may observe that your correspondent omitted to state that the wood of the trees of Marie Louise d'Uccle that produced fruit was not injured like the others. No doubt it escaped being blackened at the core, but it would have been well had the fact, if it is a fact, been stated.

I will now refer to another kind of blackening that is equally fatal to the fruit crops, and much more common—namely, the blackening of the core of the blossoms by spring frosts. If on examining the ovary of the blossoms after a severe spring frost a small black speck is found, no fruit can follow. I examined the wood of hundreds of spurs of fruit trees last April and May which were certainly not black at the pith, yet not one fruit followed on many of the trees. It was not the winter's frost that rendered the trees fruitless. If Mr. Witherspoon's theory is correct, and applying it generally, there ought to have been plenty of fruit in the south of England this year, where the frost of last winter was not sufficient to freeze the pith and blacken it, and yet if what we read is correct, the Apple and Pear crops have been about as scant in Kent as in Yorkshire and Durham. But, further, Mr. Witherspoon must remember that the winters of 1877 and 1876 were not severe, yet in the summers following fruit was about as scarce as it has been this year. In the years mentioned, spring not winter frosts destroyed the crops; but the loss of the crops this year was primarily caused by excessive wet during the flowering period. So continuous was the rain that pollen never formed on many trees that I watched very closely, and fertilisation became an impossibility; the showers of hail and rain were so heavy, too, that the blossoms were dashed from the trees even

before expansion, and the ground was quite white with mutilated petals. Your correspondent thinks the rain "may" have been detrimental, but I assert that it was positively destructive. Neither does it follow that the injury by excessive wet and frost in spring should affect all trees alike, any more than frost in winter has the same effects on all trees. Varieties vary much in the hardness of their blossoms, and further, all do not expand exactly at the same time, and hence the different results. Many good cultivators have also attributed the dearth of fruit in a great measure to immature wood, and I have observed more than once that when young and luxuriantly growing trees blossom freely fruit does not follow with the same certainty that it does on trees which have produced shorter growth that has been harder and better ripened. Various causes conspire to render fruit trees barren, and extreme frost in winter as described on the page quoted is one of them; but it has neither been the sole nor the chief cause of the general absence of fruit during the past four years, simply because there has been no such severe frost except in certain very cold districts, and during two of the years the winters were mild as the Americans say, "all along the line." Applied generally, therefore, over a wide district, and over a period including mild winters when little or no fruit followed, Mr. Witherspoon's theory fails.—A NORTHERN GARDENER.

#### NOTES FROM IRELAND.

WINTER is now upon us, and great vigilance is required in tending plants under glass. We have experienced twelve days' frost of great severity. The following number of degrees below the freezing point were registered:—November 30th, 14°; December 1st, 17°; 2nd, 24°; 3rd, 8°; 4th, 27°; 5th, 33°; 6th, 3°; 7th, 19°; 8th, 16°; 9th, 15°; 10th, 19°; 11th, 16°; 12th, 6°. On the 2nd of this month we had a fall of about 6 inches of snow; at the time of writing about 2 inches remain on the ground. A thaw took place on the 10th, and we were in hopes of less severe weather, but that evening the mercury fell 16°. We commented in a previous letter on the unsatisfactory state of the bog turf used in this locality as the chief fuel, and although we experienced six weeks of delightful autumn weather the want of drying winds left it in much the same condition, so that stoking with turf has been no easy matter. Those having an abundant supply of coal may well feel that their lots have fallen in pleasant places. Previously to the 29th of November we had but little frost. A large number of Chrysanthemums planted out of doors, which want of accommodation deterred us from potting, expanded a considerable number of good blooms. The best were Fingal, Hermione, Empress of India, Princess of Teck, and Aurea Multiflora. As we anticipated, Apples and Pears as regards keeping and flavour have been quite a failure. It may be of interest to add that on the farm here several acres of the Scotch Champion Potato grown this season have given much satisfaction; having been entirely free from disease they contrasted with other varieties which have suffered terribly. The year 1879 will not be readily forgotten in this country either by the gardening or the farming fraternity.—R. BLACKSTOCK, *King's County*.

#### WORK FOR THE WEEK.

##### KITCHEN GARDEN.

*Forcing Department.*—The chief difficulty in this department in severe weather is to prevent Radishes, Carrots, &c., from becoming tall and weakly, owing to their being kept close and covered up to exclude frost, the heat from the bed and linings causing rapid growth. This should be guarded against as much as possible by employing no more protective material than is absolutely necessary to exclude frost, and withdraw the covering as soon as possible, ventilating the frame when the weather is favourable. Potatoes also should have all the light and air possible, lining the beds as may be necessary, and protecting with mats or other material so as to exclude frost. Continue to prepare well-fermented materials, to be employed in making up beds for successive Potatoes, Radishes, Carrots, Lettuces, and Cauliflowers. Continue to introduce roots of Seakale, Rhubarb, and Chicory to the Mushroom house, maintaining the heat of Asparagus beds by additional linings. A successional bed will require to be made, and when ready fresh roots should be planted to keep up the supply. Continue to sow seeds of Mustard, Cress, &c., for small salad, which is generally in request at this season. Place in a vinery in pots or boxes a few more roots of Mint and Tarragon. Water Rhubarb, Seakale, and Chicory liberally with warm weak liquid manure after they commence growth. Where Pears have not been sown in autumn preparation should now be made for

sowing them under glass, either in cold pits, a late Peach house, or orchard house. The old-fashioned horseshoe draining tiles, 8 inches in diameter, answer, or troughs of wood may be used; but where turf can be obtained and cut into strips about 4 inches wide and 3 inches thick, it forms the best material. The strips should have a groove cut down the centre half the depth of the turf, the seed being sown and covered about 1½ inch deep. When the Peas are 4 inches high the turves may be carried out and placed in drills prepared to receive them on a warm border, mild weather being chosen.

#### FRUIT HOUSES.

**Cherry House.**—To insure a supply of ripe Cherries from the middle of April and onwards houses which are to be advanced by forcing for this purpose should now be closed. Be sparing of fire heat at the commencement, not employing it unless absolutely necessary to maintain the temperature at from 35° to 40° at night, and 40° to 45° by day, ventilating when the temperature is about 50° or 55°. Close the house at 50°. Syringe the trees and available surfaces early on fine afternoons, so as to admit of the buds becoming dry before nightfall. Plum trees in pots in this structure require similar treatment to Cherries.

**Vines.**—Attention should be given to the fermenting material in pits containing early Vines in pots, and if the pots are placed on pillars frequent additions of material may be made as the heat declines. The temperature should have been raised gradually after the buds commenced swelling from 55°, so as to have it about 60° or 65° by the time they are coming into leaf, allowing an advance of 5° to 10° by day, carefully admitting a little air at 70°. Disbud as soon as the bunches can be detected, reserving the most promising. Stop the laterals about two joints beyond the bunches. Where fermenting materials are employed the necessity for the application of moisture will not be so great as where the heat is obtained solely from hot-water pipes. Evaporation troughs should be filled with liquid manure composed of 1 lb. guano to twenty gallons of water, which may also be employed for damping the floors, &c., early in the afternoon after closing the house. The buds of the Vines in the early house now show signs of swelling, and another good watering should be given the inside border at a temperature of 85° to 90°, and in the case of old Vines liquid manure should be freely applied. From the time the buds commence swelling the temperature should be raised 2° or 3° in the course of a few days, not exceeding 60° to 65° by artificial means until the Vines have produced their leaves. In quick forcing, and where the Vines are thoroughly established and have had a long rest, growth may be induced by a brisk moist heat of 70° to 75°, continuing it until the eyes have fairly started growing, when the temperature should be allowed to fall to 65° or 60°, with 5° or 10° rise in the daytime, it being important whilst the foliage is being made that a moderate temperature be employed, in order to secure short-jointed wood and well-developed leathery foliage. Young Vines that have not been forced early will need to be brought down to a horizontal position to ensure their breaking regularly. Some well-fermented short stable manure and leaves placed in ridges on the inside borders will afford a genial moisture and warmth, and lessen the necessity for frequent syringing. See that the fermenting materials on outside borders are not cooled by snow melting on them, and lose no opportunity of turning and adding fresh material as may be required. Push forward the pruning, dressing, and cleaning of Vines in succession houses, a complete and long rest being conducive to a regular and strong break when the time arrives for starting. Late Vines that have the foliage all off will only require sufficient fire heat to exclude frost; even a temperature of 50° in sharp weather dries the atmosphere too much to preserve thin-skinned Grapes, such as Muscats and Black Hamburg; 40° to 45° is sufficient, keeping the house closed in damp weather, and seeking to ensure a dry, cool, and equable atmosphere.

**Orchard House.**—The trees in the house should before this have been placed close together and the roots protected by a covering of dry litter or fern, or if they have become frosted before this were done it should still be performed, so that they may be gradually thawed. The trees outside plunged in ashes and protected with cocoa refuse will be quite safe. The house should have a thorough cleaning when the weather is suitable in readiness for bringing the trees in early in the new year, or if the house can be prepared sooner they may be housed at once, protecting the roots of the trees with dry material. In bright and mild weather the house should be freely ventilated.

**Strawberries in Pots.**—When the crowns commence swelling and the trusses appear the temperature may be advanced a few degrees by day. A temperature of 50° to 55° is sufficiently high at night. Syringing the plants gently in the early part of bright afternoons will be advantageous. Examine the plants daily, and supply water to all those that require it. Keep a sharp look-out for aphides, and if any appear fumigate the house on two consecutive evenings. Another batch of plants should be placed in a house from which frost is excluded, the decayed leaves being removed, and the surface soil loosened and top-dressed with horse droppings rubbed through the hands. The drainage should be attended to and if necessary rectified and the pots washed clean.

The plants may be introduced during the next three weeks to a Peach house or to a Strawberry house if such be available, following the instructions given in a former calendar. Sir Harry, La Grosse Sucrée, and President, with Vicomtesse Hericart de Thury are suitable varieties. Plants for introducing later on will be quite safe in their quarters outdoors plunged in ashes to the rim, and a light covering may be given of dry fern or litter, removing it in dry weather.

#### FLOWER GARDEN.

**Bedding Plants.**—Zonal Pelargoniums and others will require to be examined frequently for the removal of bad leaves and decayed shoots, watering them early in the day should any of the plants require it. Over-watering, however, should be as much avoided as over-dryness, and they should have a temperature of 40° to 45°. Bronze, Gold, and Silver variegated, with tricolor varieties, require a temperature of 45° to 50° to maintain them in good condition. Petunias, Verbenas, Heliotropes, &c., should be sparingly watered, the foliage, however, being kept fresh, and a temperature of 40° to 45° being suitable, ventilating freely whenever the weather is favourable. Coleuses, Iresines, and Alternantheras should be placed near the glass and have a temperature of 55° to 65°. Succulent plants should be kept dry. Plants in cold frames and pits, such as Calceolarias, must be well protected with a good thickness of straw or fern in addition to the mats. Compost for spring propagating and potting should be placed under cover without delay, so as to have it in suitable condition for the purpose when the busy time arrives. Turfy loam with the turf reduced will be needed in greatest quantity, and after that well-reduced leaf soil or decomposed manure. Potashers may also be prepared; it is also indispensable to have on hand a good supply of crystal sand, in many respects preferable to silver sand for propagating purposes, though for fine seeds a stock of silver sand must be kept.

#### PLANT HOUSES.

**Stove.**—Many growers of stove plants adhere to the practice of plunging the pots in some fermenting material such as tan or leaves, or where hot-water pipes are employed to furnish bottom heat cocoa-nut fibre refuse is generally used for plunging the pots in. Except for a few species after potting, bottom heat is not necessary to the successful cultivation of stove plants. The chief objection to plunging is that the plants must necessarily be at a distance from the glass, resulting in the growth made being always more or less weak, and the plants are so much more tender when grown in bottom heat than when placed so that their tops almost touch the glass. Whether the plants are required for exhibition, conservatory decoration in summer, or for the production of flowers for cutting, they are not in the former case nearly so valuable. Although bottom heat is neither necessary nor advisable, yet a good bed of fermenting material some 4 feet thick is of the greatest service in producing a genial temperature and moisture, and a bed of this kind will maintain a heat of 90° or more for two or three months, besides being conducive to a free healthy growth. Tan is unquestionably the best material, but where that is difficult to obtain clean Oak or Beech leaves form good substitutes. Plants that shed all or a portion of their leaves, such as Clerodendron Balfourianum, Bougainvillea glabra, &c., should now for some weeks only receive as much water as will keep the remaining leaves from shrivelling. In order to induce as complete a rest as possible a temperature of 55° should only be accorded them. Evergreen plants should have sufficient water to maintain the foliage in good condition, but water at this season should be sparingly supplied.

#### TRADE CATALOGUES RECEIVED.

Walter Charles Slcock, Woking.—*Catalogue of Conifera, Roses, and Fruit Trees.*

William Farren, How House, Cambridge.—*List of Roses.*

E. André Leroy & Co., Angers, France.—*Catalogue of Vegetable and Flower Seeds.*

F. C. Pomrencke, Altona.—*List of Bulbs.*

#### TO CORRESPONDENTS.

\* \* All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense. Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

BOOKS (W. C.).—We are not acquainted with any work such as you appear to require. (D. B.).—You will find the native countries of the plants enu-

merical in the "Cottage Gardeners' Dictionary," and the dates of their introduction to this country. The price of the book is 6s. 6d.; post free from this office, 7s. 2d.

**SCENTLESS ROSES (Saver).**—You will find a list of Roses that have little or no perfume on page 198 of our issue of September 4th of the present year. If you do not possess that number you can obtain it by sending 3d. in stamps to the publisher, requesting him to send you No. 962. Pears or Plums, or both, would succeed well on the wall where Peach trees are not satisfactory.

**PERFORATED POTS (J. Gilechrist).**—The perforated pots figured on page 447 can be made by any potter; the holes should be ordered before the pots are hardened. Mr. Rivers, we think, obtains his pots from Mr. Lewis John Walker, Wood Green, Waltham Abbey.

**VALLOTAS DECAYING (S. P.).**—The bulb was completely crushed in transit through the post. If you send us another in a small box it shall be forwarded to the gardener whose instructions you have followed. We do not, however, think the spider you name has caused the decay.

**STORING POTATOES (J. S.).**—The mode you suggest will answer provided the tubers are sufficiently covered to exclude frost; but they should not remain in the bags a day after signs of growth are apparent, but should then be spread thinly in a cool and if possible a light place; the shoots will then grow slowly, and be of that sturdy character which is so serviceable for securing good crops. Very thick coverings of straw or other light and dry material will be necessary for the safety of the tubers if the present severe weather continues. The quality of the Kale is generally better when the leaves are cut off a short distance from the stem than when torn off roughly.

**EARLY APPLES FOR EXPOSED POSITION (Idem).**—*Desert*: Early Julien, Devonshire Quarrenden, and Ravelston Pippin. *Kitchen*: Carlisle Codlin, Lord Suffield and Keswick Codlin.

**EPSOM SALTS AS MANURE (W. K.).**—This substance, sulphate of magnesia, is an excellent manure, and you may safely apply it to your lawn and garden crops at the rate of 3 or 4 ozs. per square yard.

**BRIARS (J. B.).**—We have considered your question, and do not feel justified in stating the purport of it to our correspondent to whom you refer.

**ERICAS IN COLD PIT (A Reader).**—It is impossible for us to say whether the injury your plants have received is sufficient to cause their destruction. Thousands of Ericas are wintered in unheated pits, but they are well protected, and even a few degrees of frost will not kill the hardier species, but it often browns and disfigures them. Do not remove your plants to a warm house, but keep them as cool as possible consistently with the frost being excluded, and you will adopt the best mode of mitigating any injury the plants have received.

**CHRYSANTHEMUMS AFTER FLOWERING (Sol).**—We presume that your Chrysanthemums are grown in pots under glass; if so, we should cut them down level with the surface of the pots immediately they have done flowering in order to encourage cuttings for reproducing the stock for another year. If your plants are growing out of doors the first favourable opportunity should be chosen for cutting them down, and some well-decayed manure forked in around them. They will in that case form large clumps for next autumn.

**ROSES IN POTS (Granville).**—Successful growers of Roses in pots repot them every year, not necessarily in larger pots if the plants are already large and the accommodation for growing them limited, but that they may make new roots, and receive a greater amount of good food during the summer that is so essential for producing fine flowers in the following spring. The best time for potting Roses is in the month of June directly after they have finished blooming, using a compost of two-thirds of good turfy loam and a third of well-decayed manure. Tea Roses having the addition of a little leaf soil and sand. By repotting them at that period the new roots take kindly to the soil, which enables the plants to make good growths early, that become hard and ripe before the summer is ended. After potting they should be plunged in an open situation, and a thick coating of manure placed around and over the surface of the pots, so that the roots are kept cool, and the rains wash in the properties of the manure. Roses in pots are often spoiled through neglect during the summer, which is the season they should receive the most attention. You would not reap much benefit by repotting now; the better plan would be to loosen and remove a portion of the surface soil and apply a top-dressing of rich compost. Prune the plants during this month and the next, tie the points of the shoots downwards, and allow them to break very steadily and without any assistance from fire heat. They may possibly break back from the old wood. As they advance in growth a slight sprinkling of blood manure over the surface of the soil will strengthen them, using a solution of cow manure and soot as the flower buds advance.

**PRUNING OLD PEAR TREES (J. B. C.).**—It is questionable if root-pruning would render the trees fruitful. If a great number of the spurs were removed, and some of the branches too if crowded, and young growths were trained thinly to the wall and sufficiently exposed to the sun to ripen their wood, they would in due time form fruit spurs the same as the young wood does at the extremities of the branches.

**ZONAL PELARGONIUMS IN POTS (Idem).**—In all probability you will find on turning the plants out of their pots that the roots are not in a strong active growing state. In this case we should remove a portion of the old soil from them and repot in clean well-drained pots of the same size, and encourage growth by placing the plants in a light position in a house having a minimum temperature of 45° to 50°; fresh roots would then form speedily, and as soon as these protruded through the pots we should repot as you propose. You may remove the old soil and apply fresh about February, or whenever you can ensure a genial temperature for growing on the plants without check. Do not tie them down too soon.

**VINE (E. F.).**—We do not know a Grape under the name you submit. The largest black Grape is Gros Colman; the largest white Duke of Buccleuch, both of which produce berries as "large as Plums."

**GAS IN CONSERVATORY—ZINC FOR VASES (A Subscriber).**—If much gas is burnt in a conservatory it is injurious, and would cause the Camellias to cast their buds. Plants grow well in zinc receptacles, which are often employed for fitting into stone and other vases.

**ANORHECUM RESQUIPEDALE NOT EXPANDING (R.).**—The condition of the flowers we attribute to the dense fogs that have prevailed in your district in conjunction with the prolonged low temperature. Had you placed the thermometer close to the flower spike near the glass you would have found it several degrees lower than in the body of the house; but the fogs are the

principal cause of the injury, especially as you are situated near large chemical works, the deleterious gases from which could not escape from the moisture-laden atmosphere.

**SAWDUST FOR MUSHROOM BEDS (E. P.).**—It is not advisable to use sawdust in Mushroom beds, for although it will not kill the Mushroom spawn, it usually induces the growth of masses of other fungi, which impair the value of the bed, and sometimes injure the Mushrooms.

**ROSES IN CLAY SOIL (An Uxbridge Amateur).**—You may expect Roses to grow well even if the soil contains traces of iron. Some of the finest coloured blooms we have ever seen were grown in soil impregnated with iron. You can only ascertain the quantity of iron in the land by submitting a portion of the soil to an analytical chemist for examination. Plant a few Roses well, placing a little lighter compost round their roots, and we think they will grow satisfactorily.

**HEATING CUCUMBER HOUSE AND INCUBATOR (Light Brakma).**—The plan you propose would answer so far as regards the circulation of the water, but we do not advise you to carry it out. If you wish to grow Cucumbers, and not red spider, you must not think of having the pipes constantly heated to 200° whether the sun shines or not; indeed during much more than half the period of growth you would not require half that amount of heat from the pipes. Either an open chamber with slates over or covering the pipes with brick rubbish will answer. A chamber would be best in your case, having sliding shutters in the wall next the path for admitting heat as required into the house. As your pipes are shown you would, were they enclosed, have too much bottom and not sufficient top heat. The depth of soil you name, 15 to 18 inches, is ample, with frequent top-dressings. The compost you name is good, surfacing the bed with manure and fresh loam as the roots protrude through the soil. Obtain water for the incubator from another source.

**WHITE FLY INFESTING TOMATOES (Notice).**—It is a kind of midge, and is not by any means common, and mostly infests such plants as have hairy leaves, such as Gesneras, Lantanas, &c. It deposits its eggs on the under sides of the foliage, and undoubtedly feeds on the juices of the plants. The glutinous substance on the plants is a consequence of the presence of the insects. They may be destroyed by fumigation with tobacco smoke, but upon the least presence of smoke they fall to the floor, as the smoke is not nearly so dense at the floor as in the upper part of the house. Prior to fumigating the floor, borders, &c., should be well syringed, but not the plants, and as the insects cannot endure a wet surface they will be destroyed. A few fumigations at intervals of a few days will soon destroy the pests.

**CHILIAN BEET (J. M.).**—The chief value of this Beet is for decorative purposes, it being very useful as an ornament for conservatories, halls, &c., at this season, being taken up and potted before frost. We are not aware that any part of the plant is edible, though the leaves would probably be available for the same purpose as Spinach.

**PLUMS AND PEARS FOR SOUTH-WEST ASPECT (H. E. B.).**—Kirk's Plum is one of the finest, being large, deep purple in colour; or if you require a yellow one, Jefferson coming in early in September is excellent. Coe's Golden Drop coming at the end of September is unrivalled. Pears: Doyenné du Comice, Marie Louise, and Glou Morceau. If you require an early one Deurré de l'Assomption.

**PLANTS FOR DAMP BORDERS (Idem).**—*Acorus gramineus*, *Aronicum glaciale*, *Caltha palustris* flore pleno, *Cardamine pratensis* flore pleno, *Dodecatheon Meadia*, *Epilobium angustifolium* album, *E. latifolium*, *Epimedium grandiflorum*, *E. pinnatum* elegans, *Ficaria ranunculoides* flore pleno, *Hedysarum obcurum*, *Hepatica angulosa*, *H. triloba* var., *Iris germanica* var., *Lobelia fulgens*, *L. hybrida* vars., *L. siphylitica* and var. *alba*, *Lychnis chalceolicolor* and var. *alba* and plena, *L. diurna* flore pleno, *Lysimachia grandiflora*, *L. thyrsoiflora*, *Meconopsis cambrica*, *Mertensia paniculata*, *Myosotis dissitiflora*, *M. palm-tris*, *Nierembergia rivularis*, *Ophiopogon spicatus*, *Primula acaulis* vars., *Ranunculus alexandricus*, *Spiraea Aruncus*, *S. filipedula* plena, *S. japonica*, *S. palmata*, *S. venusta*, *Trollius europaeus*, *T. japonica* plena, and *T. napellifolius*.

**RATING GLASS STRUCTURES (Thomas Harwood).**—We have no recollection of the report you mention, but if you can state approximately the time of its appearance it shall be searched for. We have repeatedly expressed our opinion that a nurseryman's and florist's greenhouses and hothouses are not rateable. They are mere shelters for his stock-in-trade, and are on a large scale what the copings on his walls and the frames on his hotbeds are. Under certain circumstances stock-in-trade is rateable, but as a farmer is not liable to be rated for his stock-in-trade needed for carrying on his business, so even if a nurseryman's glass houses were considered stock-in-trade they are needed for carrying on his business. Nevertheless, as opinions have for long differed upon the point, it is useless to discuss them in any journal, and we strongly recommend nurserymen, florists, and others interested in the final decision of the dispute to subscribe and have the case decided by one of the superior Courts. The structures to which you refer are not exempt from the supervision of the Local Board. If the buildings are rated your appeal is to the Quarter Sessions.

**FLOWER FARMING IN TEXAS (N. Hammond, Rochester, N. Y.).**—You will find all the information you require in a work by Dr. Septimus Piesse, of the firm of Piesse & Lubin, of Bond Street, London.

**CUTTING A DRAIN (C. J. P.).**—The cost depends entirely on the rate of wages in your district and the nature of the soil. We do not give estimates of cost for executing any kind of work, and in your case no one could give an estimate without personal inspection of the site to be drained.

**SNAILS IN CUCUMBER HOUSE (Snail).**—The specimens you have sent shall be examined: in the meantime you must work assiduously in entrapping the pests. Perhaps a light sprinkling of greatly diluted paraffin, not more than a fluid ounce of the oil to a gallon of water, might check the pests and not injure the plants; but proceed cautiously, and try it on a small portion of the bed first, and note the results.

**NAMES OF FRUITS (Comber).**—1, Chaumontel; 2, Dunmore. (*W. S. W.*)—1, Duchesse d'Angoulême; 2, Winter Majetin; 3, Barcelona Pearmain; 4, not known; 5, Scarlet Crofton; 6, Adams' Pearmain. (*Nemo*)—White Nonpareil. (*Pomo*).—4, Hæron's Incomparable; 5, Figue de Naples; 6, Beurré De Jonghe; 10, Calabasse; 11, Beurré Chaireau; 17, Nouveau Poiteau.

**NAMES OF PLANTS (Inquirer).**—1, *Lilium floribundum*; 2, resembles *Eranthemum sanguinolentum*, but the flowers were all withered; 3, probably *Launkesteria longiflora*; 4, *Chamaecyparis sphaeroides variegata*.



## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### HOUSE AND SHED FEEDING OF SHEEP.

(Continued from page 472.)

THE first point we have to consider in accommodating sheep under cover is the construction and situation of sheds. This is really a very simple matter as regards the sheds, for on almost all occupations or home farms they will be found fit for the purpose by adding internal divisions and fittings, which will answer nearly every purpose for which they are required. For instance, we seldom find premises without some kind of shed, and which is often used for comparatively unimportant purposes, but which may be made useful for feeding sheep under cover with very little if any alteration except that of division and the arrangement of the floors. With regard to the erection of a new shed this need not be of an expensive character, for a lean-to shed attached to almost any building can generally be made suitable to our purpose if the aspect is south or south-west. Let us take first the adaptation of an ordinary shed. The first thing necessary is to appropriate the floor under cover without reference to any outside convenience. The shed should be wide enough to afford a feeding path at the back or under the higher side of the roof, and sufficient for a man with a barrow to pass along. The divisions of the pens may be made with wattled hurdles or iron hurdles, the latter being best and most durable, and will show the stock to better advantage; and whether we require to pen ten or twenty sheep, it is easy to plant either of these temporary fences at a sufficient distance apart, supposing the shed to be 10 or 12 feet under cover besides the width of feeding path, because a space outside may be used or not as required. For instance, if there is an abundance of straw to be converted into manure a space outside may be allotted to each, 10 feet under cover according to circumstances, as 10 feet by 12 feet under cover will afford ample protection and lying for eight or nine animals of the down breed according to fatness, but for the larger and long-wooled sheep only seven or eight animals.

Having arranged the pens for feeding and for littering with straw it must be understood that the pens, both inside and outside, must be covered at the bottom with dried peat, clay, ashes, or ordinary soil. The inside of the pens should be raised by mould put in dry quite a foot higher than the outside of the pens, the inside being laid with earth 18 inches deep, and the outside about 6 inches. The pens should be littered with dry and rather short straw or haulm as cleanliness dictates, the manure being allowed to accumulate under the animals. We have, however, to provide against the heating of the dung, but to prevent this fine dry earth, ashes, or peat should be strewn over the pens every other day in moderate quantities; this application will not only prevent the mass from fermenting and heating, but will fix the ammonia and prevent any evaporation of the most volatile portions of the manure. By these means, together with the firmness and solidity of the manure, will prevent the animals from suffering from lameness or foot rot. We must, however, leave it to the discretion of the home farmer, and the objects which he may have in view, as to whether he will put his sheep entirely under cover or only partly so, for we advise that fattening sheep should be entirely under roof. Store sheep brought to the shed for convenience in the case of bad weather for a time, or for the consumption of roots in preference to feeding them in the field upon strong heavy land in the winter months, may have a space outside as well as inside. These observations, however, apply chiefly to occupations where plenty of straw is available, but where it is scarce and dear the floors of the sheds may be excavated about 18 inches in depth, and earth, &c., filled into the pit, but the materials may be the same as before stated of a certain depth; there should then be a framework about 1 foot above it supported by blocks of wood, the framework being in squares of 5 feet by 6 feet to facilitate

removal; the frames should be of oak, the spanes or spars being 2 inches by 2½ inches, and placed with a three-quarter-inch space between them; the liquid manure will then pass through freely. But the pens must be swept twice daily with a birch or bass broom, the excrement will then pass through also into the pit below, but the sparred floor should be daily dusted over with a small quantity of dry sifted or screened earth mixed with powdered gypsum. This application will effectually remove any unpleasant odour, and at the same time assist in fixing the ammonia. By following these plans of shed apartments the home farmer will not only obtain the full value in mutton for the food consumed by the sheep, but will at the same time secure the largest amount of valuable manure in proportion to the food consumed. It must, however, be quite understood that attention will have to be paid to the absorbent materials, because when they are fully saturated they should be removed. They will be found in practice extremely valuable, and when placed in a dry manure house will be ready at short notice to be converted into a state fit for drilling with the various farm crops, but especially will they be valuable as an application for mangolds, carrots, cabbages, &c., and other crops requiring ammoniacal manures. We will now refer to the method we advise in erecting a new building for the purposes of house feeding; and in doing so we think that it would be well to make the pits and pens so that they may not only accommodate either bullocks or sheep, but be so constructed as to be used as boxes for the manure to accumulate under the animals with straw bedding, or be used as pits partly filled with earthy materials, the animals standing on sparred floors, and the manure saved without any litter, as above alluded to.

Having many years ago paid a visit of inspection to some of the most noted establishments where the house feeding of sheep was being carried out, we found the three most important and peculiar were those of Sir Richard Simeon at Swainston in the Isle of Wight; the Rev. Anthony Huxtable at Sutton Waldron in Dorsetshire; and J. J. Mechi, Esq., of Tiptree Heath in Essex. We found it really very interesting to see the system of sheep-feeding under cover adopted at Swainston by the late Sir R. Simeon, and in describing it we may say it was stall feeding in miniature compared with stall feeding of bullocks, the sheep being tethered to the feeding manger about 2 feet apart in a double row with feeding path between; the essential difference, however, being that instead of the liquid manure being allowed to drain away from the stalls by a gutter as for bullocks, it was at Swainston so arranged that the hinder part of the sheep stood upon grating with a pit beneath about 2½ feet wide and 2 feet deep, so that both liquid and solid manure passed into the pit to be removed daily, the urine flowing towards a tank for the preservation of the manure, to be afterwards prepared for use by admixture with earth or ashes. We have been informed, however, that the sheep would not be uniformly healthy unless the manure was removed daily. Mr. Huxtable's system of feeding on boarded floor, whereby the manure passed through into pits beneath, was designed to save the manure in a semi-liquid state, and, passed on daily from the pits into a large tank or reservoir, was treated as before stated, being mixed with ashes, &c., for use in drilling for the production of farm crops. It has, however, been stated that the animals often suffered in health, and no doubt from the effluvia resulting from the manure under the grating not being entirely cleared away. In consequence of this Mr. Huxtable reverted to the plan of stalling originally invented or adopted by Sir R. Simeon, and this he continued for some years with satisfactory results as long as the pits were daily cleared out and the contents passed to the tanks. Mr. Mechi's system was similar to Mr. Huxtable's first plan, pens with sparred floors through which the manure passed into the pits beneath and flushed with water to pass it on towards the tanks, where it was collected to be distributed by pump and hose over the farm crops in a liquid state instead of being treated with earth or ashes for drilling.

(To be continued.)

#### WORK ON THE HOME FARM.

*Horse Labour.*—Although there is much land in various districts intended for wheat still unsown, the frost has lately been so severe that nothing of any consequence has been done in sowing since the 25th of November. There is, however, much valuable work going on upon certain farms, particularly in those cases where the wheat stubbles were cleared of couch and weeds in October, for we have seen the dung being laid out lately, and in consequence of the hard frost it is done without injury by horses and carts. The preparation for mangolds with manure carted on and spread upon the land will, as soon as the frost breaks up, be ploughed under, leaving the land in capital tilth for sowing the mangold seed at the earliest time, for we believe that April is the best month for drilling or dibbling the seed especially upon the cold land in late and backward climates. As far as our experience goes, we have never succeeded better in obtaining a heavy crop than by dibbling on the balk or stretch. It is not, however, in every season that the land will work kindly and fine enough for dibbling mangold seed, but there is a fair prospect that it may prove so the next

or coming year. We are much grieved to see the general state of the land intended for root crops next year, for in almost every instance where the home farmer did not employ steam power to autumn-cultivate, the fields are in a bad state with couch and weeds owing to the wet season. The acreage of land both for wheat and roots is large where the land could not be got into condition, and is still left unsown, the root land to come in for barley, and land set out for wheat will in many cases also be put in with barley, for it is only after favourable weather in the spring that it can be cleaned in readiness for the seed time for Lent grain of any kind. During the late frosty weather much chalk has been laid out, and will soon be reduced by the frost into a nice state for mixing with the soil when required. There has also been much dung laid out on the clover seeds, and it is a good plan not to let the dung accumulate in the yards, for the fresher it is laid out the better, especially from the cattle boxes; besides which, when dung is laid out on the young seeds it protects them during frost and improves the land on the return of mild and growing weather. It is best, however, that the dung should be spread as fast as it is laid out.

**Hand Labour.**—The water meadows should be constantly attended to, for although during frost the grass will often be covered with ice this must not prevent the regular flooding of the meadows; for not only does the land under the ice maintain a higher temperature than any part not flooded, but it is always ready to receive the first flood when the thaw sets in, and which is the most valuable, because it brings down from the hills earthy deposits so valuable in irrigation. The herdsman and dairyman even during frosty weather, if no snow is on the ground, should allow the young cattle and the dairy cows to run upon the pastures for a few hours in the daytime, especially on pastures that have not been fed close or the tufts not cut down during the autumn, because the grass which has not been closely fed or rejected by the animals will often during a frost prove useful grazing; at the same time it is healthy for them, and preferable to straw or inferior hay given in the yards or sheds. Sheep, however, but especially the hungry breeding ewes, should not be allowed to graze the pastures during winter's frost, because they bite so closely that they often kill the best and sweetest herbage plants, and should therefore be taken to feed in the wheat stubbles and the old clover leas which are to be ploughed up in the spring. The sheep also do very much injury if they feed on the young clover plants or saintfoin; the latter is often seriously damaged by winter feeding. The fatting sheep will now be on root-feeding, but the ewes in-lamb, although they go out to graze during the day, should at night be penned in a dead fold placed in a sheltered position. This applies more particularly to the Dorset Downs, and those which begin lambing early, and so that the lambs may be fat and ready for market at Easter. The feeding of both cattle, sheep, and horses is now a matter of more than usual importance, owing to the short root crop and injured hay crop; we therefore recommend the home farmer to study the position in which he is placed, and how he can best meet the difficulties of the situation. A small quantity of roots can only be used, and in such case the use of chaff mixed with pulped roots and meal will be resorted to, and any chaff made from damaged hay or straw should be flavoured with Bowick and Co.'s flavouring materials, and mixed with the chaff twenty-four hours before being mixed with the roots, &c. Pregnant ewes must have but few roots, the less the better; therefore the method of using hay or straw is of great consequence to them. Hay and straw chaff may be mixed with molasses or boiled linseed, and the animals after a day or two will become accustomed to it, and may be kept in fair condition without any roots at all, and especially where they can run out at daytime over old clover lea ground. Some portion of the mangold crop is still in the ground, the frost having overtaken parties in the work of storing. Those in the land should therefore be used at once, reserving the roots in store for future use; the loss will then be greatly diminished.

### STRAINS OF POULTRY.

WE promised to give some hints on the judicious mating of poultry for breeding; but, as so much of our intended advice is connected with the question of strains, we will first briefly refer to that subject. The intending purchaser of poultry generally thinks it necessary to inquire from whose strain the birds were obtained. The question is often put by the initiated with a definite purpose—viz., to avoid mixing up different strains; but more often it is asked from a vague idea that for success in poultry breeding there is nothing like crossing as many strains as possible. As a rule, the answers given to such queries, save by really careful breeders, are very misleading and unsatisfactory, from the real ignorance of most poultry keepers of the antecedents of their stock. The vendor has perhaps had eggs from a yard, some of the birds of which came in the egg from the celebrated yards of Mr. So-and-so. They are therefore called of his strain, though possibly the eggs which originally went out of the famous yard were laid by birds which had only just come into it! We are not, however, dealing with the chances of that part of the question, but are presupposing that the eggs or birds really

come from their reputed strain. It is a well-known fact that fresh blood must at times be introduced to keep up the vigour of any race. This principle has been exaggerated into the belief that constant "changes," as people call them, are necessary. No greater mistake can be made; the idea must be entirely discarded by anyone who wishes to breed scientifically—that is, who wishes to acquire and keep up a breed with certain definite characteristics of form and feather. It is, we believe, a fact that almost every fancier who has established what may fairly be called a strain of his own has obtained it either by originally purchasing a considerable number of birds from one good yard and breeding judiciously from them, or by selecting particular families from among his own birds, in which he has observed certain excellences to be hereditary, and mating related birds from these families together up to a certain point. The former course is probably the shortest route to fame, but the "goodwill" and stock of a famous yard are seldom bought for little. The latter takes time; but it is the method most suitable to the taste of a true fancier, and ever full of interest, to watch the gradual development of peculiar beauties in individual birds, and to trace them among their descendants. We have done it with several breeds, and to us half the charm of watching the daily growth of the young stock rests in observing their strange likenesses to ancestors of the third and fourth generation back—often some famous winner, perhaps the very father or mother of the race, seems veritably to live again in a descendant. As we see old family portraits looking down upon succeeding generations the very image of themselves, so, too, in birds have we seen marvellous resemblances—combs, feet, movements exactly like those of some favourites of past years. The possession of a strain which year after year may be relied upon almost unerringly to produce stock of the highest merit and of one particular type is indeed something to be proud of; it is what money can hardly procure, and is the result of much care, accurate observation, and generally of a retentive memory. We do not consider that a fancier who procures a cock from one yard and a few hens from another, mates them, and is fortunate enough to win some prizes with their produce, has any right to talk about his "strain." Success for a year or two may be the result of a lucky hit, and may reflect little credit on the breeder. In our next article we will give some practical advice based upon these observations on strains of poultry.—C.

### CANTERBURY POULTRY SHOW.

THE seventh annual Show took place at Canterbury in the large Pavilion. It was this year confined to the six home counties, but the poultry classes were quite equal to those of previous years in quality when this has been an open Show. There were 910 pens altogether, and doubtless would have been more if the Ryde Poultry Show had not been held at the same time. The arrangements were good, as they always are at Canterbury. The Judges of poultry were Mr. Teebay and Mr. J. Nichols; Pigeons, Mr. Tegetmeier; Rabbits, Mr. Jennings; Mr. Billet presiding at the pens as usual. Catalogues with awards were printed, and in the hall at four o'clock on the opening day.

The *Dorkings*, as usual in Kent, were largely represented in fifty pens of more than average merit. *Cochins*, for a local Show, were good, Mrs. Christy in her cup pen having a hen of rare excellence. Light *Brahmas* were more numerous than the Dark; the cup was awarded to the latter, as it generally is when these classes compete together. *Game* had forty-eight pens, and Selling classes contained a few good birds and cheap. *Pigeons* were not so numerous, and equal in quality to those of last year. *Rabbits* were largely represented by the leading fanciers. I enclose a prize list, and hope you will print the awards, as they speak for themselves.—AN OLD EXHIBITOR.

[No prize list came to hand.—EDS.]

### THE BEST VARIETY OF FOWL—LANGSHANS.

SEEING in the last number of the *Journal of Horticulture* an article headed "What is the best variety of fowl?" I cannot refrain from saying a few words on the subject. For the last twenty years I have kept many kinds of fowls at various times, but always high-class birds. I do not exhibit, but for the last four years I have been fortunate in possessing Langshans, for I say unhesitatingly that both for laying and eating purposes they are the finest fowls I have ever met with. As to their likeness to *Cochins*, they resemble them only in the one good quality those large coarse birds possess, and that is they do not wander about. Their flesh is perfectly white and delicate like the *Dorking*, and not yellow and coarse like the *Cochin*. They are splendid layers, and are less broody than most fowls. The prejudice against them by exhibitors is quite a mystery, and the desire to mix and confound them with *Cochins* is, to my mind, inexplicable. Many friends who have seen my birds and tasted them have given up both *Cochins* and *Brahmas* in their favour with most satisfactory results, and I think it is well that the public generally should be made aware of the value of the birds.

In addition to their being good layers and splendid table birds, the chickens are hardy and quick growers, and therefore soon ready for use. During last spring we hatched and reared sixty-three birds, and never lost one, although my neighbours suffered heavy losses among their Dorkings and Brahma-Dorkings from gapes. The young chickens are fed on barley and scraps; the older birds on Indian corn morning and night, and scraps mid-day. As I neither show nor sell my only object in sending you these few lines is to let the public generally know the value of the genuine Langshan fowl as a bird quite distinct from the Cochins breed. I presume the love of exhibitors for Cochins and Brahmas is on account of the enormous size those birds frequently attain. —JOHN CLIMENSON, *Shiplake Vicarage*.

### NEW BOOK.

*The Practical Pigeon-keeper.* By LEWIS WRIGHT. Cassell, Petter, & Galpin.

THIS is a companion volume to "The Practical Poultry-keeper," by the same author, that was published twelve years ago. Being crown 8vo. it is just the size for the hand, and just the right size as to contents, being large enough to give much information, while it is not bulky, gorgeous, and expensive.

In one marked respect "The Practical Pigeon-keeper" is a great improvement upon "The Poultry-keeper," for the illustrations are vastly superior. They are by Mr. Ludlow, who knows well how to draw a fancy Pigeon. As regards the letterpress the author has, from long practice, become a skilled writer, exactly, and often very happily, conveying to the reader what he means; he also proves himself to be a good and capable fancier. It would have been convenient for the learner had a few introductory lines been given relative to the older writers on Pigeons, with the dates of their works; thus, I venture to hope, will be done in future editions. I am glad to see that the good old plan has been followed of taking the standard English varieties first, and particularly that very little is said about German Toys, which some writers weary us with—birds which never have been cared for in England. I am glad also to see full accounts of the frilled Pigeons, for their singular beauty of outline, colour, and softness of feathers are so very attractive.

But I am anticipating the order of the book. First a chapter on the Pigeon loft and its arrangements, with excellent plans; then the second chapter gives an account of the best food and ways of feeding; Chap. iii. breeding and general management. I notice that under this head advice is given "to turn one pair or two in by themselves, and they will soon choose a home." I have always found it a better plan to fasten each pair when mated into a pen, placing a wire slide or cage in front of it, and then they will make this their home, and no other birds will disturb them. Chap. iv. is on pedigree breeding. This is both interesting and useful. Next comes the inevitable chapter on exhibiting Pigeons. When we come to varieties we have, most properly, the Carrier placed first. One little criticism I would make. It is stated on page 75, that "In Moore's day the eye wattle had attained the size of a shilling, or nine-tenths of an inch." Exactly so, in regard to the size of a shilling of Queen Victoria's reign; but Moore lived in the reign of George II., and a shilling then, and I have one that appears never to have been in circulation, was a full inch in diameter, which makes some difference, so that Moore's Carrier was a good bird in eye wattle. Dragons, as kin to Carriers, naturally come next; but our author actually places Barbs before Short-faced Tumblers! I am afraid that could the Barbs read they would become awfully conceited. To my thinking Tumblers should have come next, and then Pouters, for Barbs have only just been admitted into the aristocracy of Pigeons. In the chapter upon the Almond Tumbler I am pleased to see the plan advocated of placing feather before head and beak. This is going back to the good old lines, and discouraging cruelty. We want beauty of plumage to be first considered, and a blow given to those who make the short face by cruel pressure, actually killing many birds by the use of their skull-crushing machines. The chapter on Pouters, like those on the Carrier and Tumbler, is an able one. The Fantail and Jacobin are next fully treated of. The illustrations, ten in number, of these feathered gems are very excellent, particularly of the Turbiteen and Blue Vizzor. May we all see more of these lovely birds, which are described as "the most fascinating in appearance of all the Pigeon tribe." Remarks on the exhibition Antwerp, with many diagrams, follow, forming Chap. xv.; while Trumpeters, Archangels, Nuns, Magpies, and Runts are compressed into Chap. xvi. A chapter on Eastern Toys, another on various German Toys succeed, when a treatise on those birds of utility, Homing Pigeons, naturally follows, and concludes the varieties. Some handy notes on diseases of Pigeons finish the volume.

The "Practical Pigeon-keeper" is an able book, and to an unusual degree in these days an original book. The author shows that he will not be tied down to old mere fancy notions, but keeps in view true beauty. As an instance I quote what he says in regard to the Carrier—"The neck should be as thin as possible at both extremities—that is, thinning almost suddenly at the

shoulders and running up to a fine clear-cut gullet; and a bird with these properties and their relatives—that is, with a long thin neck, long limbs, and long tight feathers, is said to be fine and racy-looking. It may be added that these latter properties have most of all to do with the real æsthetic beauty of the Carrier, and that they are rarely found in old birds. The great weight of the adult wattle puts too great a strain on the muscles of the neck, so that it becomes coarse; and here again we have a strong reason for insisting that certain points should not be developed in mere size any further than is consistent with other properties." I think we want more of this aiming at real and proportionate beauty in Pigeons. There is a true beauty in everything, which should be sought for, but Pigeon fancying has been too much the magnifying of deformities.—WILTSHIRE RECTOR.

### VARIETIES.

WE are sorry to hear that the whole of the beautiful stock of Dark Brahmas belonging to the Rev. Hans F. Hamilton is in the market. It is little more than a year since in "Famous Poultry-yards" we expatiated on the merits of his stock, which has been collected at immense cost. We are glad, however, to learn that Mr. Hamilton is not entirely retiring from the fancy, but wishes to devote all his space to Dorkings.

— WE have the schedule of the Swindon Show of Poultry and Pigeons, to be held on the last day of this year and the first of the next. The classification is very good, but the first prizes are only 10s.

— THE Surrey Columbarian Society will hold a Show in the Skating Rink, Guildford, on January 6th and 7th.

— THE list of prizes offered by the Bath and West of England Society and Southern Counties Association at their meeting at Worcester next year has just been issued. The main features are similar to those of the Exeter list, though with the addition of some specially local classes by the Worcestershire Agricultural Society. The principal alterations in the live stock regulations are occasioned by the change in the day of opening the Show. For the first time the Exhibition next year will open on a Wednesday (June 2nd), and close on a Monday (June 7th). Stock will be received into the yard on Monday and Tuesday, the 31st of May and 1st of June, and probably in the case of most exhibitors the change will be acceptable, necessitating a shorter absence from home than under the old arrangements. The prizes for poultry are of the same amount as at Exeter, though considerable alterations have been made in the arrangement of the classes; and by doing away with one or two which were considered unnecessary, additions have been made for the encouragement of new and popular breeds.

— THE long-continued frost with snow has completely stopped wheat-sowing in Essex, and many farmers on heavy land have little or none sown at present. Many acres of mangolds unfortunately not secured are completely spoilt, and as a consequence prices will inevitably be high.

— THE Doncaster Agricultural Society's next exhibition has been fixed to take place on Wednesday, Thursday, and Friday, June 28rd, 29th, and 30th, 1880. Entries close on May 29th.

— MR. LAURENCE PERL, Clerk to the Privy Council, has, referring to the restrictions placed on the importation of foreign cattle, remarked on the singular fact that, in spite of more stringent rules, the number of cattle brought into England during the first ten months of the present year was nearly fifty thousand in excess of the number in the corresponding period of last year. As regarded foreign competition in meat farmers should bear in mind that the cost of freightage was one of the most important items in this trade, and that whereas freights were exceedingly low, now with improved trade generally this expense would be nearly doubled. They must add to this the danger of the sea passage, for although this item had been small in proportion this year no less than twelve thousand animals were thrown overboard or lost by death and exhaustion in 1878.

— AT the annual meeting of the Royal Agricultural Society held last week it was stated that the Society now consists of 82 life governors, 71 annual governors, 2619 life members, 5099 annual members, 20 honorary members, making a total of 7891, and showing an increase of 1094 members during the current year. The Council had the pleasure of announcing that the Prince of Wales having expressed a desire of taking part in the proceedings of the Society as a member of the Council, His Royal Highness had been unanimously elected a Trustee of the Society. By the end of this year the funded capital of the Society would have been reduced by the sum of £14,000, of which nearly £12,000 had been required to meet the deficit in the receipts at the Kilburn Exhibition, while the balance had been devoted to the building of the new laboratory and to the purchase of plant and materials for the Carlisle meeting next year. The funded property of the Society at the end of the year would stand at £12,511 11s. 6d. New Three per Cents., and the balance of the current account in the hands of the bankers on the 1st inst. was £1895 19s. 6d., which, however, was not sufficient to meet the outstanding claims con-

noted with the London meeting. The magnitude of the Imperial Show at Kilburn had again drawn the attention of the Council of the desirability of curtailing this department of the Society's country meetings. They had resolved that the maximum size of stands be 150 feet. The Carlisle meeting will commence on Monday, July 12th, and close on Friday, July 16th.

### MODERN BEE MANAGEMENT.—No. 14.

#### FOUL BROOD.

THE subject of foul brood having lately occupied considerable attention in the columns of our Journal, I venture to submit the results of my experience with it, as being at present more reasonable than the subject I had intended to introduce at this point in my series. Like some others I at one time strongly suspected that the pest was in some way connected with the importation of Ligurians, but a wider experience convinces me that such suspicions are unfounded. It is doubtless true that those who have advanced so far as to introduce foreign blood into their apiaries have generally been the first to detect the existence of foul brood. But there is no just cause in this for connecting the two. The very skill and experience of such bee-keepers makes them the likely persons to make the discovery, and as a matter of fact I have found foul brood most rampant in remote localities where Ligurians had never been seen. I could instance half a dozen of such localities in Scotland. In one district in particular, at the time I was about to introduce Ligurians there for the first time, I discovered to the alarmed bee-keepers that nearly every stock over a wide district was badly affected. They at once understood the reason why, in spite of splendid natural advantages, they had for years had such a struggle to keep stocks in good condition, and why their per-centage of losses was so extremely high. Infected stocks were dying out at all seasons, the combs being either laid out as food (?) for the remaining stocks, or preserved for placing swarms in. No wonder the disease took such a hold on the district, that even after three years of earnest effort it is still a rare thing to find a stock clean. Facts like these are to my mind conclusive as to the immediate origin of the pest. It is indigenous to the country.

The nature of the plague and its symptoms and methods of propagation have been so well described by others that I need not further refer to them here. I shall only refer to my own experience with it. In 1876 I first observed it in a stock which I had remarked as having commenced brood-rearing long before any of the others—in fact, it had a large card of brood on New Year's day. Early in the spring the disease had developed to such an extent that the smell was very observable in the neighbourhood. I at once took the severest measures for its suppression. No application of salicylic acid had the least effect, so I reluctantly destroyed the whole of the combs. I saved the bees, and by carefully disinfecting everything in the neighbourhood by the use of carbolic acid I had the satisfaction of finding no further trace that season.

In the spring of 1877 I discovered a fresh outbreak in a stock that had yielded over 100 lbs. of super honey the previous season. In this case I had no doubt of its origin, as I remembered that this particular stock had robbed out a distant skep in the autumn previous. Here again I used salicylic acid solution so strong that most of the adult bees were killed by it, but with no effect. Three weeks after the syringing of the combs the appearances of the brood gave evidence that 90 per cent. was diseased. Total destruction rid me of the plague for a second time. The results of these experiments convinced me that it was hopeless to attempt a cure so long as any foul cells remained in the hive; I therefore resolved that if I should be so unfortunate as to have further experience of the malady I should at once transfer the bees to clean combs. Last spring I found traces of foul brood in two bar-frame stocks I had purchased; these I put on clean combs and fed the bees with medicated syrup. In one I found nine cells of the first hatch of brood again diseased. These I at once cut out, and thereafter that stock prospered. The other stock never had another trace of disease. Doubtless the ripe cells referred to had been infected by the food carried in the stomachs of transferred bees, and as they were cut out before they had reached the contagious stage there was no further outbreak. A neighbouring bee-keeper had quite a number of stocks infected last spring; they were all treated in the above way and came out clean. I may add that the salicylic acid used was dissolved in alcohol. I am not so certain as to the result when it is dissolved in borax and water. Experiments ought to be made with both solutions on various fungoid growths before we can be certain that the compounding of the borax and acid does not diminish the antiseptic power of either. I mean to have this tried soon, and also the remedial powers of a recently discovered vegetable antiseptic said to be even more deadly to fungoid growths than salicylic acid itself. This substance, thymol, being an extract of wild thyme, may perhaps prove Nature's own remedy to the worst disease our honey gatherers have.

The results of my experience lead me to warn bee-keepers every-

where against tampering with foul brood. The sternest measures must be resorted to. Spring is approaching when, from the general absence of brood, it is the safest time to transfer infected stocks. Let this be done in every case where the disease has manifested itself to any serious extent. Where only a few foul cells are found, and in all hives whatever, the medicated syrup should be used after cutting out the bad cells. In order to reach your neighbours' bees as well as your own set up a public drinking fountain well supplied with strongly-dosed syrup. At my suggestion this has been done in several infected localities, and I have no doubt will result in at least a mitigation of the foul plague.—WILLIAM RAITT.

### OUR LETTER BOX.

**FOWLS LOSING FEATHERS (J. S.).**—The cause may be as you suggest, and you cannot err by affording them plenty of dry ashes or soil to bask in. Baldness of the head and neck is also caused by a defect of wholesome and green food; the remedy then is good feeding and plenty of green food, at the same time rubbing the bald place with mercurial ointment, and giving a 5-grain Plummer's pill every second day for a week. Soft food is meal that has been scalded or mixed with water, and formed into a rather dry paste. The barley to which you refer will do the birds good and not harm.

**FOWLS' HEADS SWOLLEN (A. B. C.).**—Your birds are suffering from roup, which is caused by exposure to excessive wet and cold. Wash the heads of the birds once or twice a day with tepid water, and give sulphate of copper, one grain daily to each bird, mixed in oatmeal mashed with ale, and plenty of green food. As the disease is contagious separate the affected fowls from the others.

**LIME FOR LAND (Norice).**—Lime burnt from limestone will be equally efficacious for your purpose as lime burnt from chalk.

**FOWLS UNHEALTHY (Inquirer).**—Your fowls are suffering from the effects of the extremely cold weather. Keep them under cover for a few days and give them nourishing food—barley or oatmeal mashed with ale, with kitchen scraps including small bits of meat, as they have not been able to pick up insects for some time. Green food is also essential, with whole grain at night.

**HIVES (L. L. K.).**—We hope very shortly to be able to give the particulars you require.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1878. Dec.	Baromet- er at 3 p. and Sea Level	Hygromet- er.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.				
		Dry.	Wet.			Max.	Min.	In sun.	On grass.			
We. 10	30.480	84.4	deg.	W.S.W.	33.3	deg.	29.3	deg.	41.7	deg.	In.	
Th. 11	30.593	83.7	84.0	W.	33.3	33.4	21.6	41.6	17.0	—	—	
Fri. 12	30.650	83.7	83.0	W.	33.0	39.0	28.0	50.2	20.6	—	—	
Sat. 13	30.761	85.4	85.8	N.	33.3	37.6	35.1	37.0	38.8	—	—	
Sun. 14	30.582	86.2	85.0	W.	33.1	40.0	33.4	40.2	35.4	—	—	
Mo. 15	30.423	89.0	88.5	S.S.W.	33.0	42.5	35.7	45.8	34.8	—	—	
Tu. 16	30.468	81.8	81.4	N.E.	33.0	41.6	31.4	40.8	29.6	—	—	
Means.	30.568	83.5	83.0		33.1	38.8	29.6	42.4	25.8	0.006		

#### REMARKS.

- 10th.—Dull in forenoon, fine afterwards; clear frosty evening.  
11th.—Dark, foggy, frosty morning, little sunshine in middle of day, but hazy throughout; cloudy evening.  
12th.—Foggy morning, damp day, partial thaw, bright sunshine at intervals; thaw continued during evening, although the sky was nearly cloudless.  
13th.—Extreme darkness came on at 9 A.M., greater than on any occasion that has occurred for upwards of twenty years. In a room with large window facing S.W. it was impossible to see white paper lying on a black table. It continued equally dark until 10.35 A.M., when the outlines of some poplars 200 feet distant just became perceptible, although the white paper could not be seen at 11.30 A.M., the outline of the piece of paper was just traceable; at noon decidedly lighter, but the difference between plain and printed paper only just perceptible; dull and overcast rest of the day.  
14th.—Overcast throughout the day, damp, calm, and dull; snow all gone.  
15th.—Dull, calm, very damp day; fog at night.  
16th.—Dull hazy day, just a glimpse of sunshine about noon; foggy afterwards, and frost more severe towards night.  
A very unpleasant week, much fog, and continuously cold damp air. Barometer very high.—G. J. SYMONS.

### COVENT GARDEN MARKET.—DECEMBER 17.

THE supply of vegetables has been somewhat better during the week and prices easier, but trade generally is quiet and shows few signs of the approaching season.

#### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	1	2	6	Melons.....	each	0	0	0
Apricots.....	dozen	0	0	0	Nectarines....	dozen	0	0	0
Cherries.....	box	0	0	0	Oranges.....	100	4	0	0
Chestnuts.....	bushel	12	0	0	Peaches.....	dozen	0	0	0
Figs.....	dozen	0	0	0	Pears, kitchen..	dozen	0	0	0
Filberts.....	1 lb.	0	0	1	dessert.....	dozen	2	0	0
Gobs.....	1 lb.	0	0	0	Pine Apples....	1	6	3	0
Gooseberries...	sieve	0	0	0	Plums.....	1	6	3	0
Grapes, house...	1 lb.	1	6	4	Raspberries....	1 lb.	0	0	0
" Muscats...	1 lb.	3	0	0	Walnuts.....	bushel	0	0	0
Lemons.....	100	6	0	10	ditto.....	100	0	0	0

## WEEKLY CALENDAR.

Day of Month	Day of Week	DECEMBER 25—31, 1879.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night	Mean.							
25	TH	CHRISTMAS DAY.	43.4	29.4	36.4	8 8	3 53	1 19	5 21	12	0 13	359
26	F	BANK HOLIDAY.	43.2	31.4	37.3	8 8	3 53	1 58	6 25	13	0 43	360
27	S		43.0	29.7	36.4	8 8	3 54	2 48	7 17	14	1 12	361
28	SUN	1ST SUNDAY AFTER CHRISTMAS.	42.6	29.5	36.0	8 8	3 55	3 47	8 3	15	1 42	362
29	M		43.9	33.0	38.5	8 9	3 56	4 54	8 39	16	2 11	363
30	TU		44.4	31.7	38.1	8 9	3 57	6 6	9 7	17	2 40	364
31	W	Boerhaave born, 1668.	43.9	32.4	38.2	8 10	3 58	7 19	9 30	18	3 9	365

From observations taken near London during forty-three years, the average day temperature of the week is 43.5°; and its night temperature 31.0°.

## ROSES AT CHRISTMAS.



THAT season of the year reminds us more of festivities than the present, when all hearts should be glad? and what amongst the beautiful can give more pleasure and delight than the expanding Rose bud? We know the popularity of all fragrant flowers, such as Mignonette, Violets, Carnations, &c., through the dark days of winter, yet we have found solitary instances where fragrant flowers are not in demand. The Rose is more admired than any known flower, and great attention is bestowed upon it to produce blooms of fine size, colour, and symmetrical outline worthy of the great summer exhibitions. Writers have not failed in laying down rules how to grow and show Roses in the best condition, but modes of obtaining them at Christmas have not been sufficiently detailed; yet their value at this time is so great that the best means of producing them should be afforded, and the subject should have the attention of all practical cultivators.

Any attempt to produce blooms of exhibition quality at this season of the year would be vain. The Hybrid Perpetuals are not suitable for affording flowers in winter. For this purpose we must depend upon the Teas, which are most accommodating, and they may be had in bloom at almost any season of the year. The varieties are by no means numerous that will endure winter forcing and develop their flowers when darkness and fogs predominate. We may press the importance of losing no time in preparing the plants if growers intend in a future year to have Roses at this date. The preparation of plants for winter forcing cannot be accomplished in less time than is needed to prepare plants outside for yielding exhibition blooms during summer, and flowers cannot be obtained six months before their usual time without forethought and careful attention. To establish the plants for winter flowering they must be induced to make an early growth, the wood being thoroughly matured, to be again succeeded by a still earlier growth another year, until their nature appears changed or they start into growth with but little forcing in October. When the plants are in that state there is little difficulty in having Roses at Christmas.

Even amateurs with perhaps only moderate accommodation may be in possession of a few Rose buds during the closing days of the year if the rules we intend to lay down are carried into effect and intelligently observed. Roses can be produced at this date in pots or planted out. The former for the amateur might be found more accommodating than the latter; but the greatest return for the labour expended will be from those planted out. In forcing the Rose strong heat must be avoided; the temperature should never exceed 55° by night on mild occasions during winter, and in sharp weather 50° is sufficient. We have more than once wondered where Roses are in great demand that a house is not devoted to their culture and the Roses planted out. A span-roofed structure is the best, extending north and south, so that the greatest amount of sunshine can fall upon the house during winter. Two rows of pipes round the house

are sufficient, with a bed in the centre in which the Roses can be planted out and trained on an arched trellis. The roof must not be entirely covered, or else those beneath will be too much shaded, and but little success can then be attained. It will be well to have a small stage around the sides of the house upon which Roses in pots can also be grown. The majority of Tea Roses do well on the Manetti stock, upon which they can be grafted with the greatest ease. The stocks can be purchased cheaply and potted in small pots, and when root-action has well commenced, and the wood intended for the scions is half ripened, the operation can be performed with success. Plants ready worked and growing freely in the spring can, however, be purchased from any well-known nurseryman, and this is, perhaps, the best course to pursue.

We will consider the plants are growing in 5-inch pots, which should be the first shift after the scions are well united to the stocks. If a slight bottom heat can be afforded the growth will be rapid, and flower buds must be removed as they appear. When the roots reach the side of the pots the plants are in good condition for turning out, providing the borders in the house are ready and the soil has become thoroughly warmed. Before planting they should be lifted from the bottom heat for a short time. The soil for the plants in pots should consist of good loam, with one-seventh of well-decomposed manure and sand. We urge the importance of not using vegetable matter amongst the soil for the border, but substitute quarter-inch and half-inch bones mixed with wood ashes or charcoal broken small, and coarse river sand. Stimulants are best given in the form of liquid manure, and further assistance can be rendered by rich top-dressings. The plants in the 5-inch pots, if the border is not prepared, can be potted into 7 and 8-inch pots according to their strength. Bottom heat is still serviceable, and the house in which they are to grow should be kept somewhat closer until the roots have again taken to the new soil. It must be borne in mind in all stages of their development they must be liberally supplied with air to maintain a sturdy growth, and cold draughts on all occasions must be avoided. Those intended to be planted out should be attended to as early as possible, as under the planting-out system they attain greater vigour and strength, and cover much more of the trellis than if kept in pots late. From this planting time if deemed desirable those in pots can be grown in the same house and under the same conditions as regards temperature, air, &c. The external atmosphere will by this time render artificial aid unnecessary. The house can be closed in the afternoon, allowing the temperature to rise considerably. The syringe should be employed twice daily in order to keep the foliage clean and healthy. If green fly appears in any stage fumigation must be resorted to, but we have found soft soap more satisfactory, say 2 lbs. boiled for half an hour in an old saucepan and mixed with about four gallons of water. One pint of this should be used in each large can of water at syringing time. This keeps the plants free from spider, fly, and that most troublesome of pests "mildew," and at the same time imparts to the foliage a fine glossy appearance. The remaining plants, or those in pots, can if their progress



has been sufficiently rapid be transferred into 10-inch pots, and the weaker plants can remain in their 8-inch pots; but this is a question that must be left to the judgment of the cultivator.

When autumn approaches the wood must be thoroughly hardened and ripened, and the plants brought to a complete rest by maintaining the atmosphere of the house dry and cool. Here we may safely point out the advantages of the rest we advocate. For instance, a house of Tea Roses for producing flowers in winter which came under our notice. Healthy vigorous plants were planted during summer in a border similar to what we have described. They progressed favourably during late summer and autumn, and, instead of receiving that rest so essential, they were kept slowly growing all winter because they continued to produce a few solitary buds. Their growth during spring and early summer following was weak, puny, and insignificant, almost covered with mildew. Many of the plants required that long rest we have on past occasions pointed out in the Journal, and were only fit for the rubbish heap, where the greatest portion of them went. The border with other things was considered as the cause. But the unnatural system practised in keeping them constantly growing enfeebled the plants and ruined their constitution. During our experience we took the charge of a house similarly treated, and we failed with every attempt to encourage growth. It occurred to us that the plants were exhausted. Nature was allowed for a time to take its course in early summer, when growth should have been vigorous and free. After this we again gently excited the plants into growth, which was vigorous and strong, although unripe and unfit for the production of first-rate flowers. The growth has been ripened earlier each year. Another season, and then they will be in good condition for the production of flowers at Christmas. Those young plants subject to autumn and winter maturation, should after rest be slightly pruned by removing weak and unripened shoots, and should be again slowly started into growth. It will be wise if the flowers are sacrificed and the strength of the plants devoted to the production of wood. They can be gradually started in January instead of a month later, by maintaining a temperature at first of 45°, and as growth progresses it should be raised to 55° by night, with a gradual rise by day from sun heat. The growth should be completed as early as practicable, so that earlier starting can again be resorted to until the growth is made sufficiently early to be started in October. If the Roses are in good condition and prepared as described, and started ten weeks before Christmas, the cultivator will not fail to have Rose buds at this festive season, and certainly no flowers that he can produce will be more highly appreciated than these fresh and fragrant Tea Roses.

Such varieties as Gloire de Dijon, Lamarque, Belle Lyonnaise, Marechal Niel, and other varieties of the same habit of growth, should, if in pots, be grown on the same principle as pot Vines, with the exception of temperature. One shoot only should be allowed to grow as long as possible without pinching the end. When the plants are well established they will grow many yards in length during a season in 10 or 12-inch pots. The unripe ends at pruning time only should be removed, and the long strong shoots trained round four stakes inserted round the side of the pot. After resting they can be started, and will produce a bloom from every eye along the shoot. With a number of plants they can be subjected to early growing, and, like pot Vines, can be grown to start at any date. Gloire de Dijon is the best for early forcing, the others are better adapted for spring blooming. Those mentioned will be best adapted for covering the roof of the Rose house, to which might be added Céline Forestier.

For early forcing, to bloom in the depth of winter, the following free-growing, profuse-flowering and charming varieties will be found invaluable—Safrano, Isabella Sprunt, Niphetos, Duc de Magenta, and Louise de Savoie. The following varieties, grown in the same house as those to bloom in midwinter, bloom freely a little later with us—Alba Rosea, Rubens (a fine old Rose), Adrienne Christophe, Goubault (a very free Rose in spring), Mad. Falcot, and Devoniensis—not the climbing variety. Then following these are Adam, Homère, Jules Margottin, Marcelin Roda, Marie Van Houtte, and Catherine Mermet. Many of the varieties of Teas when subject to early work soon die out, while others refuse to grow—for instance, Aline Sisley, Anna Ollivier, Duchess of Edinburgh, Bougère, Montplaisir, Perle des Jardins, and others do not succeed if subjected to much unnatural forcing. Many do well in pots and also planted out where they are allowed to grow on naturally. The first men-

tioned in our list for the Rose house bed are unsurpassed for those desirous of having their delicate and fragrant buds, which rank without doubt first amongst choice flowers at this season of the year.—WILLIAM BARDNEY.

### ESTIMATES OF EARLY PEARS.

THE idea of engraving a well-known standard variety of Pear, and inviting opinions of its merits as compared with other varieties which ripen at the same time, is an excellent one which I hope will be carried out to the full extent it deserves, as I cannot imagine any other way of getting the required information in a form which will enable us to place the true value on it. I hope everyone who can, will contribute his mite of practical information on this all-important subject; but let us each time confine ourselves to a very small portion of the ground which has to be covered. Never mind about repetitions of local circumstances; we must have them in a condensed form with every communication, and at least the name of the county in which the writer lives; the full address where it can be conveniently given will be useful.

For the present we are to confine our attention to the season which precedes and includes the ripening of Williams' Bon Chrétien. I cannot of my own practical knowledge at this place (and remember that is all that is invited) give an opinion of the other varieties which ripen at the same time; but I must say that if there is a better Pear for the season than the one under consideration it must be good indeed. Possibly, however, the musky flavour, so conspicuous in this variety and so much relished by most people, may be objected to by a few, and it is but right that these few should be treated with respect.

Williams' Bon Chrétien requires to be gathered before it is ripe, certainly as soon as there is the least change of colour at the eye of the most forward fruits; and, like all early Pears, it wants using on the day that it becomes fit for the table. The soil here is very heavy, resting on the stiffest of clay. Trees on the Quince stock do not last long; and although we are sheltered on the east by a well-clothed hill some 300 feet high and well wooded on the north side, the south-east winds in spring are very destructive. I do not consider the situation favourable for Pear-growing; but I must own that it has hardly had a fair trial, as owing to frequent changes before I took charge the garden abounded with young trees without names, most of which have now proved useless, but which I could not remove till they had been tried. I have Williams' Bon Chrétien as a standard, as an espalier which is now allowed to grow rather wild, also a small plant on a wall with east aspect, and a larger one on a north wall, all on the Pear stock. The fruit on the standard and espalier come very much spotted; that on the east wall is the cleanest, largest, and best coloured, but is soon over; while that on the north side of the wall is rather shy in fruiting, but the fruit is good, generally without spots, and lasts in condition the longest.

Jargonelle is the only Pear I have which precedes Williams' Bon Chrétien. There is a standard in the orchard and two large horizontal-trained trees on the east aspect of a wall. It is best on the wall at present, but I do not despair of growing it well as a standard, which form suits it best, as it bears best on the ends of the shoots. My trees of this are also on the Pear stock.—WM. TAYLOR, *Wiltshire*.

ALTHOUGH I was one who advocated an election of Pears, and endeavoured to prevent lists of varieties being sent in a desultory manner so as not to prejudice the election, I am now quite convinced that the plan projected of discussing the merits of the best varieties will be more useful, and certainly much more interesting, than what I may term a bald election compiled from imperfect collections.

Brevity, I presume, is advisable in estimates of the varieties submitted last week. As to locality, my experience during thirty years of practice is wide, having been gained south of London and north of York. I will take the south Yorkshire district, and state that over an area of at least 200,000 acres not exceeding 200 feet elevation, that as an August Pear the Early Harvest (Amiré Joannet) will succeed as standards on the Pear stock where the soil is deep and good and the position sheltered from the north and east. On light poor soils the fruit cracks. The Cluster Pear is not so good, the fruit being so small and often "woody." Doyenne d'Été succeeds well as a pyramid on the Quince. For quality the last-named is the best

of the three; for quantity, the trees being large and healthy, the first. Grow both.

Of the August Pears, so called, Jargonelle, Citron des Carmes, and Williams' Bon Chrétien are indispensable. They all succeed on the Quince, I will not say as close pyramids, for they dislike severe pruning. Plant them well and let them grow, and they will yield good crops of useful fruit. They are equally adaptable for walls, espaliers, and in very sheltered situations they also on Pear stocks make profitable standards. I have only grown Beurré de l'Assomption and Souvenir du Congrès on a wall having a south-eastern aspect; the former is not so early as I expected, ripening in September, and the latter is decidedly later than Williams' Bon Chrétien. Both are fine Pears of superior quality. Beurré Giffard is a free-growing and good Pear in the north-east of England. I have named sufficient for most growers, and I pass by the others submitted on page 487 as being less useful for the district named.

I may add that I do not attach so much importance to the "rainfall" as some do, as I have proved, to my own satisfaction at least, that a fall of 20 inches in the low-lying flat east coast, where rain drains away slowly, is equal in watering power to 40 inches in hilly districts, where the water passes rapidly away.—A NORTHERN GARDENER.

OF the July Pears, the best I am acquainted with are Doyenné d'Été and Amré Joannet. The first I consider as being the best and most generally useful. They are not much grown in this district, as it is not suited to very early Pears; but in the midland counties, especially Leicestershire and Staffordshire, they are both extensively grown.

In the country villages around Leicester very many large old trees of Amré Joannet are to be met with, which bear most abundantly, and the fruit is sold in large quantities in the markets. It is, however, to be regretted that young trees are seldom seen, the reason probably being that the tree does not appear to bear freely in a young state, and hence is not freely planted. The soil and climate of Leicestershire appear suited to Pear-growing, it being mostly of a light friable nature on a sandy or gravelly bottom, into which the Pear roots freely and seems quite at home.

In the district around Sheffield the soil is of a stiff tenacious character, with a clay or rock bottom. In this soil the Pear makes vigorous growth, but seldom or never ripens and matures that growth properly.

Jargonelle is the best early Pear grown here, and is most prolific on unpruned and untrained standards, although the fruit is not so fine as that grown on walls.

Upon the closely pruned pyramid trees which are grown in most gardens around here very little fruit is produced, and little is had from the trees excepting the annual crop of wood. Citron des Carmes and Williams' Bon Chrétien are also fairly well grown in this neighbourhood, the former as standard trees and the latter on walls under glass. With us in an unheated house Williams' Bon Chrétien bears freely every year, and generally produces very large and fine-looking fruit, and even there they are seldom in condition before the middle or end of September.—W. K. WOODCOCK, *Sheffield*.

I WAS glad to see the idea put forth of determining the relative merits of different Pears in various districts, which will without doubt prove more useful than an election conducted on the same principle as the late one on Roses. No kind of fruit is so worthy of cultivation for dessert purposes as the Pear, and none so widely influenced by soil and climatic influences. Our collection is very limited, and it is requisite that it should be, for many good and standard varieties, which in more favourable localities are excellent, are here poor and useless. July Pears in this locality are entirely out of the question, and Doyenné d'Été does not ripen with us until the end of August or beginning of September. It is upon the Pear stock, and trained as an espalier. It is first-rate in quality, especially so in rather wet seasons. Our soil is of a light sandy nature, about 3 feet in depth, resting upon red sandstone rock.

The Jargonelle on the Pear stock with us ripens well on a west wall, and is for this district one of the best early Pears. On a wall much care is necessary in producing a crop, as it fruits best upon forcing wood, and is therefore better adapted for growing as a standard without the use of the knife. This Pear is largely grown as standards in the fertile valley of the Tyne near Hexham, and in the neighbourhood of Boston and Spalding in Lincolnshire, where it flourishes and fruits abundantly. Beurré Giffard then follows, and as far as my expe-

rience is concerned I should certainly recommend it to be planted in East Lincolnshire either as a pyramid on the Quince stock or on the south wall. Williams' Bon Chrétien is without doubt an excellent Pear, but in this neighbourhood of Liverpool is very shy of bearing fruit, and with us a crop is very uncertain. As a standard both in the south and many parts of Lincolnshire it is of unrivalled excellence. It must be gathered before it changes colour on the tree and ripened in the fruit-room, or else it possesses, comparatively speaking, no flavour.—W. BARDNEY, *Lancashire*.

CONSIDERABLY upwards of a hundred varieties of Pears are grown here in a walled garden, and an orchard sheltered by a wood upon an upper slope of the forest ridge in the middle of Sussex, and about 400 feet above the sea level, with an average annual rainfall of about 35 inches, a decline of 10° in temperature in October, which is generally the most rainy month of the year, and with cold cutting winds of long duration in spring from the north-east. The soil is on the Hastings sand formation—poor, thin, and light, almost pure silica very finely divided, with a close heavy subsoil of silica, and clay very retentive of moisture, and therefore thoroughly drained with ordinary 2-inch pipe drains, 4 feet deep and 30 feet apart. As the soil is so poor stations were made for the trees when the planting was done nine years ago. All the trees have become fine specimens, and in the garden, where the soil adjacent to the stations has subsequently been repeatedly enriched with manure, they are in a satisfactory condition of healthy fruitfulness; but in the orchard, where the subsequent enrichment of the soil has not been so thorough as could be wished, canker has done much mischief to some of the trees—another instance of many known to experienced fruit-growers that canker always attacks trees in a poor thin soil.

There are pyramids on both Quince and free stocks, palmette verriers on walls, and as espaliers on free stocks, and diagonal cordons on Quince, and many of them double-grafted. All of them have not yet fruited, but most of them have, and I am glad to say many prove worthy of a place in this paper. The following are the best early Pears that have yet fruited here:—

Summer Doyenné (Doyenné d'Été), cordon on Quince stock, east wall; fruit small, sweet pleasant flavour; ripe early in August, is a free bearer and a useful early variety.

Desiré Cornelis, pyramid on Quince; fruit above medium size, delicious rich flavour, very sweet and juicy; is a free bearer, ripe end of August.

Summer Beurré d'Arenberg, cordon on Quince, east wall; fruit of medium size, of fine flavour, very rich, sweet, and juicy; a valuable addition to our September Pears.

Williams' Bon Chrétien is worthy of the post of honour assigned it on page 487, for I have seen it in all sorts of situations, and the fruit has been invariably good. Excellent fruit of it has been gathered from a wall tree on the free stock, another wall tree on the Quince, also from pyramids on both stocks.

Comte de Lamy, cordon on Quince, also pyramid on Quince; fruit from both of the highest excellence, of medium size, very sweet, rich flavour; free bearer; ripe end of September.—E. LUCKHURST.

AMBROSIA is one of the best early Pears here, coming in before Williams' Bon Chrétien grown as an espalier 20 feet from the garden wall. It is a great bearer, slightly musky, and flavour excellent. I have heard judges say that it was the best-flavoured Pear grown. Be that as it may, I consider it the best early Pear. Williams' Bon Chrétien, grown on espalier 20 feet from the wall, one of the best Pears grown, bears regularly and well; a great favourite. Doyenné d'Été, a fairly good early Pear, is not a good cropper here on espalier or pyramids. Jargonelle on walls east and west aspect bears well, and is of excellent quality. Souvenir du Congrès does fairly well as a pyramid, but has not yet quite established its reputation with us, and the same remarks apply to Beurré de l'Assomption.

The situation is very flat, about three miles from the Lincolnshire Fen, from 20 to 30 feet above high-water mark. The average rainfall for the year is 26 inches, although the rainfall was much more last year, and also much above the average this year. Soil a calcareous limestone not above 1 foot deep originally, but prepared for fruit trees, and well drained. Pears in general do well on the Pear stock, but do not thrive on the Quince. I have tried the Quince on walls all aspects,

espaliers, pyramids, and bushes, but in only one case did it succeed, and that was Beurré Hardy as a pyramid.—**D. LUMSDEN, Blozham, Lincolnshire.**

#### PEARSON'S GOLDEN QUEEN GRAPE.

As a new Grape still on what might be termed its trial, I think it would be interesting to know what satisfaction this Grape is giving this winter. Last year some of your readers complained of it not keeping well, but this is contrary to my experience of it. The late Mr. Pearson had a high opinion of this Grape, as he thought its extreme hardiness, free-growing, free-fruited, late-keeping, and good flavour were all such conspicuous qualities. The result of my experience corroborates this opinion. At the present time we have some bunches hanging in a cool house as fine and clean in colour, &c., as the best Muscats. As a late white Grape to use from November to March we think a few Vines of this variety would prove most useful.—**A KITCHEN GARDENER.**

#### CHRISTMAS ROSES.

THERE is something peculiarly charming in a flower which has grace and delicacy and yet can endure the keenest blast of an east wind and our most intense frost. Such is the Christmas Rose. Whoever thought of giving it that name must have loved the flower itself, for he has contrived to join in one, two words with the happiest associations. But the Hellebore deserves its common appellation thoroughly. It is true it has none of the fragrance of the summer Rose, and yet it has a sweet gentle perfume which is very pleasing; and it has another good qualification—it lasts an immense time as a cut flower in the winter nosegay. Indeed that is the chief use which can be made of it, for in the depth of winter it is hardly possible to enjoy an outdoor plant. The best way to treat it, if it is to be allowed to flower out of doors, is to grow it in grass; the flowers will then come much purer and brighter than if it is grown in the border. But on the whole it is better to place a handglass over the plants to protect them from the splashing of mud by heavy rain. So covered they will come on slowly, and flower more abundantly and have larger blooms than plants kept in pots. But in order to make sure of them at Christmas it is quite necessary to pot them and keep them for a month or so in a gentle heat; you can thus time them to flower just when you like after once the buds are formed. Some people leave them planted out all the summer and pot them in 6-inch pots in the autumn, but I am inclined to think that it is better for the plants not to be disturbed, but to keep them in large pots all the year; in this way they thrive well if they have plenty of water in the summer and are placed in partial shade. They will continue yielding their delicate blooms under such treatment from the latter end of November till the end of January, and then the outdoor plants are ready to succeed them. They like good supplies of liquid manure, which may be given liberally without any stint.

But while the species *Helleborus niger* is so useful, its larger variety *maximus* is still more valuable, the flower being much more beautiful and the foliage more handsome; but the smaller one rejoices in being the pet of "my lady" at the Castle. This may be because it gives more abundant flowers and adapts itself more to forcing operations; but it is a pity that the large variety is not more generally grown.

With a little trouble I should fancy that very good crosses might be made between the various species. It is true they do not flower together, but that might be arranged with a little care, and I fancy the result would be worth the trouble. *H. abchasicus* is a beautiful plant and does well in a rockery. It produces seed freely. I saved some ripe seeds from my plant of it last year and sowed them at once, and I see that they are now just beginning to germinate. It is necessary to have great patience with some seeds. I was convinced that these were good and must grow because I saved them myself from fine well-filled pods; but it is only now, after about six months, that they are beginning to reward my patience. The only two wild species, *H. viridis* and *H. foetidus*, are neither of them common. I have found them apparently growing wild, but it was, I believe, after the fashion of those garden plants which, scattered round, marked the spot where once

"The Village preacher's modest mansion rose."

They grew in the hedge where a garden had been. *Viridis* is a plant well worth growing as a picturesque rockery plant.

Green and bright, as the name implies, its whole beauty consists in the manner of growth and in the various shades of green in flower and leaf.

The genus *Helleborus* is nearly allied to another little winter flower, I mean the Winter Aconite, *Eranthis hyemalis*. Allied in race, they flower in the same dark gloomy season. If the Christmas Rose is grown in the grass it would be well to have masses of its relation by its side, for it is equally happy in such a situation, and its round fingered leaves look well when the bright yellow flower is gone. The latter is of course no use for gathering, unless it is ruthlessly dug up, as some people dig up Crocuses for dinner-table decoration; so that it might often rejoice in being let alone, while its larger and more aristocratic cousin is carried off for the church or the drawing-room.—**A GLOUCESTERSHIRE PARSON.**

#### THREE USEFUL ORCHIDS.

If we were confined to cultivating only three genera of Orchids, we would choose *Dendrobium*, *Odontoglossum*, and the *vestita* section of *Calanthes*. By selecting suitable species from the first two genera, and adding *Calanthe vestita* Veitchii, *C. vestita rubro-oculata*, and *C. vestita luteo-oculata*, choice Orchid flowers may be had "all the year round." As winter-blooming Orchids the three *Calanthes* named are unsurpassed for decorative purposes. The flower spikes remain fresh a long time after being cut, and three or four of them along with a few fronds of Maidenhair Fern placed in a suitable glass or vase form a most graceful object. There are two varieties of *Calanthe Veitchii* in cultivation. The flowers of one are lighter in colour than those of the other. The darker-coloured variety is considered the better of the two. Both varieties, however, are beautiful. Where choice flowers are in demand in winter these *Calanthes* should be cultivated in numbers.—**B.**

#### THE SHORTEST DAY.

BEFORE these lines are printed we shall have passed the shortest day of the year. What an amount of meaning lies in these few words, especially to gardeners! They may not, it is true, affect much the mind of the head gardener to some great nobleman or wealthy commoner who has an acre or so of glass under his charge; they may not excite any interest in the mind of him who, at this season, can stroll through his Camellia house and see hundreds of grand blooms in the perfection of form on the one hand, and the most glowing colours on the other; nor of her who spends her time wandering in the stove house, where the most glorious Orchids from Brazil caress her hair and kiss her face as she strolls along.

No; all these may care nothing about the turn of the days. But what do these words convey to the general public, the teeming millions of our cities, the hardy countrymen who till the soil? Above all others, what thoughts do they suggest to the occupants of lone country personages, who during these winter months are, as it were, buried alive?

The shortest day is passed, and causes a feeling of great pleasure to me, who live far away from town, miles removed from a railway station, a mile or so it may be from a decent high road. "You ought to be let down by a rope such a road as this," says one visitor to the writer of these lines; "it is scarcely safe to venture down in the ordinary way." And so the involuntary recluse who inhabits these "wylds" looks out on the landscape, and feels as if life were a little bitter to him, that so far as he can see he thinks he may answer Mr. Mallock's question, "Is life worth living?" with a decided negative, for what prospect meets his eye?

The beds in front of his window are empty. Here and there a miserable broomstick sort of standard Rose presents a few forlorn leaves, which are as much like what they are in summer as a broken-down cab horse is to a thoroughbred racer. As he looks the wind causes a dilapidated creeper to blow against the window, and as he listens he thinks of the words that suggested the opening of Beethoven's C minor Symphony, "So Knocks Fate." He must, he thinks, get out of this or he shall go mad. He will go to town and forget the weather, and the bare beds, and the dismal country. He arrives there, and finds London enveloped in a dense fog. At noonday it is as dark as night. The gas is burning all day at his club. He cannot stand this. He can, at least, see to read at home during daytime without artificial light. So he hurries home, to find the weird symphony still being played. He is in despair, when suddenly he remembers a fact that he had for the moment forgotten.

He calls to mind the day of the month, and finds that the shortest day is passed, and that now things must soon mend.

He may not see that the days lengthen at first, but he knows that they are really doing so; and this conveys the sweetest comfort to him. Let the rude wind bluster away, let the trees bend their heads in terror at the blast, let the soaking rain swamp his garden, let the prospect be ever so bleak, he can stand it all now, for the days are lengthening, and each time he rises from his bed he knows that he is one day nearer spring.

Soon in his garden Nature will tell him of spring's approach. The Hellebores, the old Christmas Roses, will begin to look a little green at their base, however dead the leaves may seem, and in a few days there will appear to the observant eye the first signs of a bloom bud. As soon as he sees this he takes comfort, for he knows that this is the earliest forerunner of spring; that those large white blooms, though they rise on a carpet of snow, are leading the vanguard of Flora's army, which is come to wage war with winter; and though the fight may be arduous and long, though the keen frosts may decimate with the rigour of their attack these fair flowers, yet again and again will the Hellebores advance to the front and hold their own. Soon they will be joined by other regiments. The Primroses will come to their help, while the Snowdrops will raise their white standard and fight for Queen Flora; and when these have gained the day he knows the cause is really won, although the fight may be waged for many weeks.

But see, the days are now visibly lengthening, and the sun is getting higher in the heavens. While a few days ago the lamp was lit at four o'clock we can now read to nearly five; and hark, is not that a bird? Yes; a robin is singing its evening song to the Creator of all things before tucking his brown little head in his scarlet breast for the night. Yes, the bravest of birds, the faithful little watchman of the house, which never leaves us be the weather what it may, is one of the first to tell us the days are lengthening—the shortest day is come and gone.

Ah, now; the case is not so hopeless. Now we can, without feeling sick at heart, turn our eyes to the book shelf, and bring down our volumes on Roses; or we can dive in a drawer and bring out what may be called our "stud book," the book in which we record the names and the numbers of varieties of Roses which we grow; or we can turn into the fruit room and have a look at the Gladioli bulbs reposing on the shelves. We feel them over one by one, and see if the frost has hurt them. No; the little stove has done its duty well. The bulbs are hard and dry, and we know that the time will soon come when we shall want to plant them. Now, too, we may take stock of our Rose labels, and see how many more Alfred Colombes and Marie Baumanns we must order to be printed. While we are doing this a visitor is announced. "Oh! only the carpenter." "Well, what do you want?" you ask. "Please, sir, work is scarce just now, can you give me a job? Something I can do at night during the long evenings will suit me best." We stand for a moment in doubt, when suddenly we remember the Rose boxes. They will want overhauling. They are so knocked about on the railways. Some want repairing, all want painting; so we hand them over to the carpenter, and send the man away happy—for the time at least. When the boxes come back the days are certainly much longer; you can hardly believe the man really wanted a job during the "long" evenings.

All these little occupations, trifles though they be, help to pass the time of the gardener, and serve to keep up his spirits during the dismal months of the year. But above all other thoughts, the one that breathes the sweetest air is the conviction that the shortest day is past.

"But what is all this?" I hear some of my readers ask. "Surely 'WYLD SAVAGE' has had his mane combed to some purpose, and fed on gruel and water, before he wrote so sentimentally." "No, he's not, sir; he's in his usual health. He may be growing old, but he has most of his teeth and lives much the same as ever; he's only been struggling after a ray of hope to cheer in a dreary season at a time when dulness should be abandoned; and if you think the struggle is indeed a failure—well, it is a time of the year when Christmas boxes and other sentimental customs (which have a flavour of reality about them, too, to most of us) are in vogue, and so for once, considering the season, please excuse a—WYLD SAVAGE.

CHRISTMAS FLOWER SHOW AT EXETER.—In Messrs. Lumcombe, Pince, & Co.'s nursery in the Alphington Road Dr.

Woodman has a fine assortment of flowers. In one house there is a magnificent display of five hundred blooms of the wax-like Lily of the Amazons, the Eucharis. Near at hand are delicate Orchids with crimson or orange-tinted centres, and in an adjoining house the crimson-crowned Poinsettia pulcherrima provides valuable material for decorative purposes. Some scores of Hyacinths and many of the great Lilies of the Nile are also in full bloom, both having been forced on to meet the Christmas demand. Visitors, however, will feel most inclined to linger in the long house of glass, the atmosphere of which is laden with the perfume sent forth from the varieties of Roses which are here blooming in summer-like profusion. The great Camellia house, where some of the trees are fifty years of age, is noted throughout the west of England, and most of the trees are now crowned by white and scarlet blooms. The buds are to be numbered by thousands, and but for the prolonged absence of sun many more blooms would have shown themselves than have yet appeared. One of the show houses has for a month past been occupied, and is still filled, by a great variety of Chrysanthemums, and these in themselves form a flower show well worth seeing. Most attractive are the Japanese varieties, each flower looking like a bunch of delicately coloured shavings. James Salter, Gloire de Toulouse, Fair Maid of Guernsey, Elaine, and Abd-el Kadir are among the most striking varieties, and all are especially valuable from the length of time which they remain in flower; while among the incurved varieties the beautiful white blooms of Comtesse de Granville cannot but excite admiration.—(Western Times.)

#### IRIS FÆTIDISSIMA VARIEGATA.

We seldom meet with this variety of Iris, yet it is one of the most useful hardy fine-foliaged plants in existence. The variegation usually consists of a narrow stripe of greenish-white colour, the remaining two-thirds of the long narrow leaves being of an intense green occasionally faintly striped. This variegation although not showy is very persistent, and taken into conjunction with the lightness of growth and the fact that no extremes of weather appear to affect its well-doing, renders it a very desirable and useful plant, whether it be for employing with either the summer or winter bedding plants or for the decoration of verandahs and corridors. It is easily propagated by division whenever the plants are wanted—any portion of its rhizomatous stem can be easily moved, and soon forms a strong clump. We have used quantities of it at different times, taking up a few strong clumps when wanted and dividing them, placing them either in clumps for centres of beds or lines, or else singly dotted among Myosotises, Silenes, Pansies, and Violas. It is a most accommodating plant, thriving anywhere; we have it on hot banks in very poor soil, and under trees, in the front line of shrubberies. Those planted in a stiff and very clayey soil grow the strongest, soon forming clumps from 2 to 3 feet through. We also usually lift and pot some for use where hardy plants in pots are wanted. The bloom is very insignificant, but the above-mentioned good qualities entitle it to a greater share of attention than it at present receives.—W. IGGULDEN.

#### DIGGING AMONGST FRUIT TREES.

I THOROUGHLY agree with "A KITCHEN GARDENER'S" system of manuring fruit trees, which is recorded on page 443. No better practice could be adopted than that referred to. We never disturb the ground amongst any kind of fruit trees except when root-pruning, and that is only once in three years. We root-prune a few trees every year, so those that are done this year will need no further attention in this respect until the autumn of 1882. Our largest square of Raspberries has been planted seven years. Since then a spade has never been employed amongst them, and the result is strong canes and good crops. Strawberry ground receives plenty of fresh manure trenched in previous to planting; after that nothing is done to disturb the surface, but a good dressing of manure is applied every autumn, which remains on till the fruit is gathered; then when the general clearing away of weeds and runners takes place the Strawberry refuse is raked off, and the work is done until the ground is hardened by dry weather or frost, when the new dressing is wheeled on. Apples, Pears, Gooseberries, Currants, and Raspberries are treated in a similar manner, and we have no reason to complain of our crops either in regard to quantity, quality, or keeping propensities. What good can result from a system of digging and cutting

amongst surface roots annually? As "A KITCHEN GARDENER" very correctly observes, the destruction of the surface roots must tend to render trees fruitless, as those roots must be the principal agency in producing fruitful wood.—H. ELLIOTT.

### THE METEOROLOGICAL SOCIETY.

THE usual monthly meeting of this Society was held on the 17th inst. at the Institution of Civil Engineers: Mr. C. Greaves, President, in the chair. T. Buckland and G. Wigner were balloted for and duly elected Fellows.

The following papers were read:—"On a Sandstorm at Aden July 16th, 1878," by Lieut. Herbert H. Russell (8th Regt.); "On a new form of Hygrometer," by G. Dines, F.M.S. This is a modification of the hygrometer which was first described at the British Association Meeting in 1872. The outside dimensions of the instrument inclusive of the wood casing, are about 10 inches in length, 3 inches in breadth, and 2 inches in depth. The upper part consists of a vessel of thin metal, 6 inches long, 2½ inches broad, and 1½ inch deep. Beneath this and detached from it, but connected by a pipe, is a small chamber 2½ inches long and 1½ inch deep from back to front, standing about a half inch more forward than the vessel above, and with a piece of thin black glass in front. Inside this chamber parallel to the front is a division which separates it into two parts. This division does not extend quite to the top of the chamber, and is slightly turned over towards the front so as to allow water to pass over it, and to induce the latter to flow more directly to the centre of the front of the chamber. The upper vessel is connected with the bottom and back part of this chamber by a small pipe, with a tap to it which is turned from the outside. The front of the chamber has a pipe attached to the bottom, passing upward in an inclined direction, and terminating at the outside in a small lip or spout. A thermometer with the bulb inside and over the front of the chamber passes through an indiarubber collar at the top of it, and is protected by a groove sunk in the face of the wooden case. The action of the instrument is as follows:—Water of a lower temperature than the dewpoint is placed in the upper vessel, and, on the tap being turned, flows into the back of the small chamber, and thence passing over the top of the middle division flows downwards, cooling in its passage the thermometer and black glass, and eventually escapes by the small spout on the right side of the instrument. As soon as dew appears on the glass the flow of the water is stopped by means of the tap, and the temperature is read off by the thermometer. When ether is used it is poured into the small shoot, passes down the inclined pipe, and remains in the front part of the chamber. A piece of metal tube ground so as to fit the inclined pipe tightly and with an aspirator attached is then inserted, and the dewpoint is ascertained in the same way as by Regnault's hygrometer. "The Diurnal Range of Atmospheric Pressure," by R. Strachan, F.M.S. The author has compiled a table of constants from thirty places in various parts of the globe, which support Sir John Herschel's remark that "the diurnal oscillation of the barometer is a phenomenon which invariably makes its appearance in every part of the world where the alternation of day and night exists, and that within the Arctic Circle the diurnal dies out, or rather merges in the annual oscillation." "Note on a Curious Fracture of a Solar Radiation Thermometer," by G. M. Whipple, B.Sc., F.R.A.S.

Mr. R. H. Scott, F.R.S., exhibited and described a new form of sunshine recorder, which is to be used during the coming year at a considerable number of stations distributed over England.

### THE CULTIVATION OF THE GLADIOLUS IN THE MIDLAND AND NORTHERN COUNTIES.

A CORRESPONDENT on page 440 asks a question which, as he himself suggests, is difficult to answer without knowing more of the conditions with which he has to deal, especially the county and the nature of the soil. It is very tantalising to those who work under the difficulties of bad climate and bad soil to read in your Journal descriptions of success in open-air gardening, which they know it is hopeless for them to attempt to imitate. Those who write gardening directions for the public are too apt to forget that rules of cultivation which suit Kent or Cornwall may be quite inapplicable to Northumberland or Lancashire.

I have grown the *Gladiolus* (*gandavensis* varieties) in different places for more than thirty years. I have read everything I have been able to find about its cultivation. I have at different times taken the advice of the most successful growers, and have bought bulbs from at least twenty of the leading dealers, and the conclusion at which I have arrived is that the climate of midland and northern England is suited for the cultivation of the *Gladiolus* only in the same way as the *Hyacinths* are grown there; those who grow it must be contented to see their stock lessen and deteriorate

from year to year, or must replenish it annually by fresh purchases. At present I live on the clay soil of Cheshire, and I persevere in planting three or four hundred *Gladioli* every year. About two-thirds of these flower, and about half of those which flower seem to ripen healthy bulbs, sometimes two or three bulbs each, but these do less well the next year, and if the stock is not replenished it gradually dies out.

As regards the question of leaving them in the ground, I have never ascertained exactly to what amount of frost a *Gladiolus* bulb may be exposed without being killed, probably either in or out of the ground it might stand 10°. In December, 1860, I lost through carelessness a large stock of *Gladioli* from frost, though they were stored on the floor of a bedroom; but those who are careful can protect them from frost by litter, either in the ground or out of it. My habit has been to leave part of my *Gladioli* in the ground without any protection, and to lift and store part of them, and I have never seen any great difference in the results, both plans being, as I have said, failures. Last winter, it is true, killed nearly all that were left in the soil, but this was my own fault; those I lifted were finer and healthier in appearance than I had ever had them, but the result of this season has been miserable. I had not two hundred good flower heads out of five hundred bulbs planted.

No doubt the chief cause of failure to grow the *Gladiolus* successfully in Cheshire is the deficiency of summer heat, the average summer temperature being several degrees lower there than in the south of England. The bulbs are not properly matured. Soil has something to do with it, but my flower beds are all perfectly drained at a depth of 3 or 4 feet, and I have tried every composition of soil and every aspect which can be recommended. It is true that any artificial soil is to some extent starved and chilled by the surrounding clay however well it may be drained; but in gardens a few miles from mine where there is no clay the *Gladiolus* behaves just as it does with me, so I lay the chief blame to the climate. The history of our *Gladiolus* beds is much the same from year to year, varying slightly according to the season, and it is as follows:—The bulbs are planted from the middle of March to the middle of April, attention being paid to the directions of the best growers. About one-tenth never appear above ground at all, in one-fifth of the remainder the shoot turns brown and decays at the base when 3 or 4 inches high. Those which survive that stage generally make flower buds, but many either become brown and wither before coming into flower, or suddenly fall, and do not recover. I have sent bulbs in every stage of failure to experts for examination; sometimes the verdict is "No assignable cause," sometimes "The bulbs seem quite healthy, and will probably succeed in a better soil and climate." I may add that in spite of all these troubles, which I have not exaggerated, my garden is famous in its neighbourhood for its *Gladioli*, and I am constantly asked by neighbours both where to get the bulbs and how to grow them. I may also say that I have tried planting side by side a bed of bulbs obtained from M. Andrieux of Paris, and from Messrs. Kelway of Langport—French-grown against English-grown, without any observable difference in the results. I am curious to know whether any gardeners in the midland and northern counties of England can obtain much better results in the cultivation of the *Gladiolus*.—W. DOD.

### CHAPTERS ON INSECTS FOR GARDENERS.—No. 1. NEW SERIES.

IN the order Orthoptera (*i.e.*, "straight-winged" insects, from the usual mode in which the under wings are covered by the upper) are arranged some of the species that are of very large size, and which surpass all their brethren in grotesqueness or in singularity of shape. There are not here the multitude of species noticeable in other groups, as, for instance, amongst the flies and the beetles; but the Orthoptera will compare favourably with any other insects in regard to their powers of increase and their great agility. The destructive effects produced by several species have made their name expressive of alarm in those countries where insect life is at the full flood, owing to favourable influences of time and sun; and the British gardener may congratulate himself that if, in these temperate regions, his plants have to suffer at times from sudden changes, he escapes, through his location, hosts of insect enemies capable of doing damage which, unless seen, can hardly be credited. Doubtless there is, however, a compensating force in Nature, since where plant life is often interfered with by insect foes or by atmo-



spheric disturbances the damage is in many cases speedily repaired by a new growth.

In the Orthopterous order the insects undergo the usual transformations; but in the pupa, or third stage, they are nearly always active, so that the difference between the larva and pupa is only that the latter has upon the back the rudiments of wings. Whoever has watched the evening frolics of a party of cockroaches (*Blatta orientalis*), commonly called "blackbeetles," must have noticed the fact that as they run about they seem equally agile, though varying in size, while some exhibit the wings partly developed. It is one peculiarity of these pests that in their domestic life with us the adult cockroaches never make use of their wings to fly; possibly these aid them in executing the leaps from walls they sometimes perform. Then, again, the newly-hatched little creature belonging to this order has altogether a near resemblance to its after self; there is no difference, such as we observe, between the maggot of a fly and the perfect insect. Some justification of the name "beetle," applied to certain species, lies in their possession of wings and wing-cases, but in the Orthoptera these overlap; in the true beetles they mostly meet in a line at the middle of the back. At the extremity of the body are



Fig. 49.—Mole Cricket.

two bristle-like appendages, which are very long in some of the crickets. A glance at the head of a specimen, even without the aid of a magnifier, suggests the predacious character of this order. The jaws and maxillæ are well developed; biting and grinding are both performed vigorously. Several species are, moreover, capable of inflicting a bite in the human skin which will cause sharp pain.

We pass by here the curious insects to be inspected in our museums, a few of which occur on the continent of Europe but the majority in tropical countries, called Leaf Insects and Walkingsticks, also the Mantides, sometimes regarded with superstitious reverence because, when hunting for their prey, they assume the attitude of prayer. Our English species are divisible simply into two groups—the little group of the runners, and the larger group of the leapers, these being again divided. The Blattæ, or cockroaches, of the first group are best known by *B. orientalis*, a name significant of the supposition that this odious species came to our islands from the East. There is strong probability that it was imported from somewhere—a minor mischief arising from our commerce. Now, at all events, the insects have distributed themselves throughout the country, and instances have been reported to us where the cockroach has travelled from the kitchen into hothouses and conservatories. In such places, beside the offensiveness of their presence, intruders have been noticed to attack some plants, usually succulent species. The late Edward Newman has noted the circumstance, as a redeeming quality in their character, that cockroaches seek out and devour the malodorous *Cimex lectularius*; but he asserted there was no foundation for the statement that cockroaches and crickets will not abide in

the same dwelling. So vivacious are cockroaches, that no ordinary measures suffice for their destruction, but they may be caught in traps by beer and then killed by heat. Phosphorus paste has strange fascinations for them, frightening away afterwards, seemingly, those who have seen their brethren suffer from its effects. A peculiarity in the habits of the female cockroach is that she carries her eggs in a case or capsule beneath her body, and when this is matured the parent assists the young larvæ to escape from the shell. Cockroaches of various sizes may now and then be noticed quite white, indicating that they have just cast their skins, the new skin not having acquired hardness and colour. Besides this naturalised insect, we have several British species of cockroach, less in size, and not so frequently observed. It is the habit of some to live under bark, some hide under stones or in masses of herbage; these are not, however, the cause of any damage in gardens.

Coming to the second division, the first family comprehends the crickets and the grasshoppers, with long antennæ and flattened wing-cases, with also a very remarkable musical instrument, which has been called a natural violin, complete with bow, string, and sounding-board. We are so accustomed to hear sounds issue from the mouths of the larger animals, that we naturally think at first, when we hear the chirp of a cricket, that the noise comes from the insect's mouth; and the old entomologists had an idea that it was caused by the rubbing together of the legs; some insects do, in fact, manage to produce sound in that way. But we will let Professor Westwood describe the vocal apparatus of the field cricket, which may serve as a sample of the family. "On the margin of the wing-cover," says he, "a thickened point is observed from which several strong veins diverge, forming angles. The strongest of these veins, which runs towards the base of the left wing-cover, is regularly notched like a file. The wing-covers being closed, this oblique bar lies upon the upper surface of the corresponding part of the right wing-cover, and when a tremulous motion is given to the wing-covers the bar on the left rubs against the bar on the right, and thus produces a vibration." The sound is echoed or increased by the whole surface of the wing-covers. The strength of these insects is proved by their ability to continue this motion of the muscles for hours, as anyone knows who has had the misfortune to live where house crickets "most do congregate." Misfortune! did we remark? It is not that to all persons, for some do positively like to hear the monotonous stridulation of the cricket. Certainly we may more easily admire the chirp of the grasshopper on a summer's day, though that may be wearisome if heard for too long a time. In all these species it seems that only the males have this gift of song, as poets call it.

But there are differences in voice, even amongst species nearly allied. The mole cricket (*Gryllotalpa vulgaris*), fortunately not common in Britain, has been styled the "Churr Worm," from its low monotonous note, while in structure it much resembles the quadruped that has given it the more usual name. This insect drives extensive tunnels under the soil of kitchen or flower gardens in some instances, and they destroy plants, not only by the injuries produced through their biting operations, but by dislodging them from the soil. White of Selborne alludes to the damage done in his locality. Of late years, however, we have not heard much about the mole cricket. Its smaller relative, the field cricket (*Acheta campestris*) is also an excavator, but not so extensive a one, and it generally forms its burrows in dry fields. Frequently it preys upon other insects, but not sufficiently to merit the title of a friend to the gardener, which has been bestowed upon it. And this insect, probably, when young feeds chiefly on leaves, like most in the family. A meteorologist has observed that by a peculiar change in their chirp the field crickets indicate the approach of rain; possibly this is also true of the house cricket (*A. domestica*). Both are fond of moisture, and the latter, feeble as it looks, displays dexterity in digging amongst brickwork.

The grasshoppers have shelving wing-cases; and, though the popular name assigns them a low position in the world, they are commonly found leaping, or at rest, amongst bushes and trees. None of them are troublesome to the horticulturist, nor even to the farmer; but the largest English species (*Gryllus viridissimus*) which is about 2 inches long, and of a beautiful green tint, furnishes occasional paragraphs to country newspapers, being reported as a "locust." The eggs of grasshoppers are placed in the earth, the females being provided with ovipositors; from these the young brood appear in the spring. We

have about a dozen species of the Gryllidae; one or two are quite small and unable to fly, but in all the legs are longer and more slender than in the crickets.—J. R. S. C.

### CAPSICUM PRINCE OF WALES.

AMONGST other plants bearing brightly coloured fruits and berries, and that prove useful for decoration at Christmas time, this Capsicum is especially valuable. It is easily grown. Our seed was sown in April, but May would have been quite soon enough, and the plants were grown and shifted steadily on till they were in their fruiting pots, the best size apparently being pots 6 inches in diameter. When well established some were placed in a warm and what in some seasons would have been a sunny spot in the open, and others in a cool plant house. The former made but poor progress, but the latter formed good heads about 5 inches high, no pinching being resorted to. The fruit sets freely, and hangs from every joint of the flat branching head; it is short, thick, and conical in shape, the colour when ripe being a bright yellow. We found it necessary to introduce some of the plants into heat to ripen the fruit; neither does the temperature of a cool house suit them after it is ripe. *Solanum Capsicastrum* set badly this season, and we have had to introduce the plants into heat to ripen the fruit for Christmas decoration.—W. J. O.

### COST OF EXHIBITING ROSES.

I REGRET much the spirit in which "WYLD SAVAGE" has thought fit to reply to my letter in your number of the 11th inst. First he seems to object to any answer to his article in the "Rose Annual" being published at all in the Journal, and then accuses me (I cannot say of him, as he says of me, "in courteous language") of "giving no reasons, adducing no arguments, and simply giving my *ipse dixit*."

The description of me, as "a correspondent perfectly unknown to him," I may dismiss as irrelevant to the question. I simply read his article, which is public property, and concluding that his estimate of expense necessary to be incurred by exhibitors was excessive and calculated to deter some at least from exhibiting, I thought myself well justified in endeavouring to show that by a different system this expense might be considerably reduced, and be brought within the reach of some who, while as fond of Roses as "WYLD SAVAGE" or myself, would find it easier to spend £20 or £30 than £100. Nor was this a matter which would keep a year. His article appeared at a time when Roses were being ordered, stocks planted, and Rose gardens prepared, in many cases doubtless with a view to exhibition.

Your correspondent says in his letter that he gives no advice as to "when" the exhibitor is to begin to show; not in so many words, but he includes in his £100 estimate the expenses of exhibiting, and mentions the cost of travelling to Crystal Palace, &c. What inference can be drawn from this but that these are shows the exhibitor is expected to attend, and this in the first year! for his estimate is all through that of establishing a collection for exhibition, not of maintaining it in subsequent years.

I confess myself much surprised by his success with newly bought Roses. I presume much must be attributed to soil; mine is very heavy, and it takes at least twelve months for Roses to establish themselves, and those I bud will surpass them even then. Let me quote from Mr. Reynolds Hole: "If you propose to grow Roses for exhibition you must grow them on your own stocks from buds." So if I err it is in good company. Relative to the question of such extensive disbudding, I wrote from experience and found only the effect mentioned.

Again, "I dispute his figures." Now the only figure I think which I dispute is the price of manure, and even in this matter I take his price, not my own, as the basis of calculation. Had I worked with my own price I should have diminished the sum charged by half; and even then, according to "KENTISH CURATE'S" opinion, have set it 40 per cent. too high. The price is simply a question of locality, and I am very much mistaken if my calculation is not nearer a general average than his. After all the question resolves itself pretty much into this: "Can you afford to buy all your Roses? and will those transplanted give exhibition blooms with you?" If you can answer these questions affirmatively, well and good; but if price deters you, or purchased Roses will not at

first thrive with you, I named a cheaper and more satisfactory mode of attaining the same result.

But to one of "WYLD SAVAGE'S" figures contained in his letter to the Journal I really must demur. He talks about 25 per cent. of stocks as not having struck and 25 per cent. more as blown out. I have just counted off one hundred stocks of 1878, and find just nine blanks from death of stock or bud, and shall blame my own carelessness if I lose half a dozen more by the wind. The only question of cultivation, I think, in which I am at issue with him is that of manuring at the time of planting, and here I am not alone. I am supported by the National Rose Society, by Mr. Baker, Mr. William and Mr. George Paul—no mean authorities.

I hope I have succeeded in justifying both the writing of my former letter and its contents. Like "WYLD SAVAGE" himself I could have no other object than the advantage of the Rose-growing community, and especially the younger members. Thanks to him for the pleasure many of us have received from his notes on Roses, and a merry Christmas to him and all of them. I fear the new year will be one of disappointment, and that the frosts will have played havoc with many a garden, but let us hope for the best.—DUCKWING.

### WINTER LETTUCE.

WE grow numbers of these in various parts of the kitchen garden, and although they are covered over with flower pots, mats, straw, or fern, very many are destroyed. For this reason we are not depending much on such crops now, as we find it much better to have a supply under frames. When Melons, Cucumbers, &c., are cleared out of the frames in September a large number of Lettuce and Endive plants are lifted from the open borders and planted as closely as possible. A frame 6 feet by 8 feet will hold a large number, and a supply of fine, clean, crisp Lettuce is afforded for a long time. At the present time we have several frames full of Lettuces and Endive which have been covered over with lights, mats, and fern for three or four weeks to keep the contents from frost, and during the time of frost or snow we have only to push a light up or down to cut clean half-blanced Lettuce and Endive in much better condition than ever we can obtain them from the open quarters at this season.—J. MUIR.

### NEW COLEUSES.

It is now about twelve years since Mr. Bause commenced at Chiswick those experiments in the hybridisation of Coleuses which proved so remarkably successful, and resulted in the production of a number of distinct and handsome forms. By the skilful intercrossing of seven or eight species, varieties were obtained greatly superior to their parents in a decorative point of view, the leaves being brilliantly and diversely coloured, and the margins elegantly crenated and incised. Attracted by such satisfactory results many other hybridists turned their attention to the Coleuses, especially Messrs. Bull, Henderson, and Cannell, whose annual lists of novelties have considerably increased the number of really useful forms; indeed, so abundant have they become that the public taste is in a degree satiated, and a new variety must now possess exceedingly good qualities to ensure a ready reception. Still, we cannot by any means afford to neglect these useful plants, for in the decoration of the conservatory during spring and summer they prove, with suitable treatment, of great value, the richly tinted leaves contrasting very agreeably with the green foliage of other plants. The Coleus has also taken its place as an exhibition plant, and in the special classes devoted to it at most horticultural exhibitions remarkably handsome specimens are frequently staged, although in some cases excessive luxuriance and extraordinary dimensions instead of high colour and symmetry appear to be the object of the cultivator.

During the present year at least thirty good varieties have appeared in commerce, and of these eleven have been honoured with first-class certificates at the meetings of the Royal Horticultural Society and the shows of the Royal Botanic Society. The following varieties are particularly attractive:—James Barnshaw.—Of free growth, with fine handsomely marbled foliage richly marked with red, green, and yellow. Majestic.—Very bright; large, tapering leaves, crimson in the centre and margined with yellow. Starlight.—Very distinct; leaves of a bright rose tint beaded with yellow, and undulated margins. Maude.—The ground colour of the leaves pale yellow, irregularly mottled and streaked with crimson and

green. Duchess of Teck.—Highly effective; the leaves purplish crimson in the centre, with a broad margin of bright yellow. Tricolor.—Foliage of a dark velvety maroon colour, lightened by a crimson midrib and a green serrated margin. —L. C.

#### ORIGIN OF WILLIAMS' BON CHRÉTIEN PEAR.

In your article (page 488) on Williams' Bon Chrétien Pear you say it was raised by a man named Wheeler, a schoolmaster at Aldermaston. I desire to say the schoolmaster's name was Stair; my grandfather went to school to him, and my father, who is seventy-nine years old, remembers the original tree quite well. I live two miles from Aldermaston, and the old people about here know Williams' Bon Chrétien by name as "Stair's Pear."—PADDLE.

#### NOTES AND GLEANINGS.

REFERRING to the EFFECTS OF THE FROST IN LINCOLNSHIRE, Mr. Lumsden of Bloxholm Hall Gardens informs us that many shrubs are killed to the ground, all the varieties of Broccoli completely destroyed. Brussels Sprouts, Cottager's and Buda Kales have escaped, and do not appear to be much worse for the severe ordeal through which they have passed.

A CORRESPONDENT informs us that the FROST in East Norfolk has been very severe; old Cabbage stumps are killed to the ground, while Sutton's new Glazed-leaved Cabbage, and also their new Thick-leaved Cabbage, are likely to prove a great boon to many, as they are not injured in the least. Cauliflowers and Broccoli are much injured, and many will soon decay.

ONE of the handsomest species of Scabious we are acquainted with is *SCABIOSA CAUCASICA*. It produces a large number of flowers from June to August, about 3 inches across. The outer florets are deep porcelain blue, while the inner florets are white, with the orange-coloured anthers exerted. It is a true perennial and quite hardy. Planted in the mixed border it is very showy and distinct.

"I CAN strongly recommend," writes Mr. W. Groves of Shortlands, Kent, "EARLY RIVERS PLUM. Last season my Plums were quite a failure with the exception of this variety. I am getting rid of others less worthy, and planting this—the most valuable Plum that I have."

EVERYBODY who possesses a rockery, or who cultivates alpine or choice border plants, should have *ONOSMA TAURICA*, as it is exceedingly showy. The leaves are narrow lanceolate, thickly covered with rough stellate hairs, which are lovely microscopic objects. The thyrse of flowers are produced very freely, supported on peduncles about 6 inches high, which at the floriferous portion is nodding. The flowers are about 1 inch long, with tubular corollas of a deep yellow colour. The rockery is the best place for it. We have had it remarkably strong in a well-drained sunny position, although we have also seen it in splendid condition in warm borders, notably a plant at Mr. Joad's of Oakfield, Wimbledon Park, which was crowded with flowers. It is not very plentiful owing to the difficulty experienced in increasing it. If cuttings are taken off about February with a heel and kept in a cold frame a good percentage of them will root, and we have also found that if some sandy soil is laid at the base or middle of the plant the shoots will frequently root. It flowers from May to July. It is abundant in the hills of Tauria, as well in the Caspian Caucasus mountains, and has been introduced into this country nearly a century.

DR. RICHARD SCHOMBURGK has published a list of the NATURALISED WEEDS in South Australia, which contains several interesting facts. Such well-known and troublesome weeds as *Capsella Bursa-pastoris*, *Stellaria media*, *Senecio vulgaris*, *Sonchus oleraceus*, *Solanum nigrum*, *Rumex Acetabellae*, *Urtica urens*, *U. dioica*, and a few Grasses have spread very rapidly and are becoming great pests in some districts. *Erodium cicutarium*, *Plantago major*, *P. lanceolata*, and *P. Coronopus* have spread chiefly in pasture lands, and are stated to be greatly relished by cattle. Although the majority of species are natives of Europe a few have been introduced from Tasmania, the Cape of Good Hope, &c. The most remarkable of these is the Cape Dandelion, *Cryptostemma calandulacea*. It was first observed in 1850 on the banks of the Gawler River, but it is now "found quite two hundred miles toward the north of its starting point, covering even the untimbered moun-

tain ranges to their summits." Cattle and sheep are very partial to it.

MESSRS. JAMES CARTER & Co. inform us (that after our reporter left the meeting) they were awarded a first-class certificate for the SCOTCH CHAMPION POTATOES submitted by them to the Fruit Committee of the Royal Horticultural Society last week. The Potatoes are referred to in our report on page 483.

WE have received the usual annual parcel of MESSRS. LETTS' DIARIES, which are adapted to every conceivable purpose either of the counting house, the library, the household, or the pocket. It is not only as diaries that they are valuable, but they contain much information of a general kind which is useful to everybody. We can strongly recommend them as by far the best of any we have seen.

WE have received the PROGRAMME of the SECOND HORTICULTURAL EXHIBITION which is to be held at Buenos Ayres from the 22nd to the 29th of February, 1880. It is divided into four sections—1, Fruits; 2, Plants; 3, Vegetables; and 4, Miscellaneous. The Secretary is Senor Fernando Mauduit.

THE President of the Entomological Society of Ontario, in his annual address made before that body, stated that for some years past experiments have been made with various other substances with the view of finding a SUBSTITUTE FOR PARIS GREEN as a plant insecticide which would be less dangerous in the hands of the careless, and among them none have been used with greater success than common blue vitriol or sulphate of copper in solution, in the proportion of about an ounce to a pail of water, and applied in the same manner as the Paris green mixture. This article is worthy of, and will doubtless receive, a more extended trial, as its use under any circumstances would be attended with but little danger. For the destruction of household pests insect powder has lately attracted much attention, and is probably the most valuable agent we have for this purpose, and it is quite harmless to man and the higher animals. There are two sorts of this powder, known in commerce under the respective names of Persian and Dalmatian insect powder; the former is the powdered flowers of *Pyrethrum roseum*, the latter of *Pyrethrum cinerariæfolium*. The Dalmatian powder is most highly esteemed. The powder is diffused through the atmosphere by means of a small bellows, or insect gun, and in a very short time it brings house flies, cockroaches, &c., on their backs, and is equally effective on insects infesting plants.—(Prairie Farmer.)

#### A TRIO OF CHOICE HARDY PLANTS.

*Androsace lanuginosa*.—Nearly all the *Androsaces* are very handsome little plants from alpine regions, but this species is exceptionally beautiful when in health. The ovate leaves are thickly covered with long silky white hairs, which, contrasted with the pinkish flowers, render the plant very pretty. The branches are trailing, growing very freely, producing numerous umbels of flowers of a deep bluish colour. The umbels are about 1½ inch across, thickly set with flowers, which last a considerable time, and they are produced from April to August: in fact, we have seen them after that time during the past season. The plant enjoys a well-drained and warm position on the rockery, and in the event of a very wet winter it is best to cover something over it, as the woolly leaves are apt to suffer. The long shoots look exceedingly pretty over a ledge on the rockwork.

*Cyananthus lobatus*.—This is one of the numerous alpine plants from the Himalayas. It has a large perennial fleshy rootstock, from which are annually produced numerous trailing branches with small rather dentated or lobed leaves, while the flowers are produced at the extremities of the shoots. The flowers are about 1 to 1½ inch across, clear sky-blue colour, with the throat white with silky hairs. This also requires a warm and well-drained position on the rockwork, and as far as our experience goes it does not require any protection whatever, but has stood very severe winters with us (South London). It delights in a rich soil.

*Viola gracilis*.—Taking the *Violas* as a whole, they form a handsome family, we mean regardless of the progenies of *cornuta*, *tricolor*, &c. This species, however, we consider one of the best. It is a very free grower, most profuse bloomer, and with good habit, which is suitable for the rockery or border. The flowers are about an inch or more in length, deep bluish purple, produced in enormous quantities all the summer, and when the erect flowers are seen covering the dark green shoots



trailing over the rockery it must be considered one of its best ornaments.—T.

#### REVIEW OF BOOK.

*Rays from the Realms of Nature, or Parables of Plant Life.*  
By the Rev. JAMES NIEL, M.A. London: Cassell, Petter,  
and Galpin.

THE author of this work has successfully endeavoured, in describing some well-known or remarkable plants, to deduce from a study of vegetable life illustrations of scriptural truths. The high moral tone and pleasant instructive style of the writer render the book an excellent one for presenting to young people, and indeed there is much that could be read with advantage by those more advanced in years. For this reason we recommend it to parents who are desirous of placing in the hands of their children works of unquestionable morality.

The following passages will sufficiently indicate the general character of the book. In the chapter aptly entitled "Death unto Life" we find this graphic description of the origin and

progress of vegetation on islands—"Observe the life of many islands. At their birth they were bare rocks. Then the Lichen came and fixed its slender film, bloomed, and withered, and left behind the first faintest indication of soil. Next came the Moss, raising its slender stalk, soon to pass away, and add its tiny deposit of earth. Now the hardy Fern appeared, springing up again and again in wild profusion, in its turn to die and replenish the ground. In time the very rock itself, under the influences of sun and shower, decayed and crumbled away, and rolled down in its ruin rich fertile mould. The waves washed upon its shores cocoa nuts, which during last year's storms they had snatched from some far-off beach—those travellers whose fragile bark is so wonderfully poised as to float in salt water and sink when it reaches fresh. The birds dropped over it in all directions the seeds which formed their often undigested food. Then came many a wild flower and many a stately tree. Centuries pass by, and out of this cattery of nature comes a glorious scene of life."

Under the same heading are some references to the wonders of geology. "When the secrets of the mine are revealed we



Fig. 50.—A FOREST IN THE COAL PERIOD.

see how its black veins consist of the buried ruins of vast forests and ferneries of stupendous growth and rank luxuriance. Singularly grand and beautiful were the lonely groves of that primal era. The markings or regular tracery on the stems of the plants led Hugh Miller to style this vegetation 'the sculptural.' He says, 'In walking among the ruins of this ancient flora the paleontologist almost feels as if he had got among the broken fragments of Italian palaces erected long ages ago, when the architecture of Rome was most ornate and every moulding was roughened with ornament; and, in attempting to call up in fancy the old carboniferous forests, he has to dwell on this peculiar feature as one of the most prominent, and to see, in the multitude of trunks darkened above by clouds of foliage that rise upon him in the prospect, the slim columns of an elder Alhambra roughened with arabesque tracery and exquisite filigree work.' These age after age alternately flourished and fell, and were finally overwhelmed in periods immensely remote; yet their destruction has given to man the coal which forms the very sinews of the wondrous life of commerce and arts in these last days."

The annexed engraving (fig. 50), for which we are indebted

to Messrs. Cassell, Petter, & Galpin, will convey a good idea of the illustrations with which the book is freely adorned, and also enable our non-geological readers to form some conception of the peculiarities of plant life in the coal period. On the right and left of the engraving are trunks of Sigillarias, Lepidodendrons, and Tree Ferns, while in the background are seen gigantic allies of the Lycopodiums (Lycopodites), Calamites, &c. We may remark that in the coal measures of Great Britain over three hundred fossil species of plants are found, the majority of which are very distinct from existing forms.

A description of the *Valisneria spiralis* is correct, but the writer has omitted the fact that the staminate flowers are produced near the root, and when mature separate from the plant and rise to the surface of the water, there floating about and fertilising the pistillate flowers.

The frontispiece is a coloured floral dial, but the times fixed for the opening and closing of the flowers must only be taken as approximately correct. The information conveyed is generally accurate and reliable, but a few errors occur of which we especially remarked the following. The *Agave americana* is stated on page 88 to be included in the same family as the



Pine Apple, whereas the former is a member of the Amaryllidaceae and the latter of Bromeliaceae. Cocus should be Cocos. *Urania speciosa* is not a Palm but allied to the Musas, and *Papaver Argemone* appears for *P. Argemone*. It is scarcely necessary to add that the type, paper, binding, &c., are all that can be desired in a work of this kind.

#### GOOD PEARS.—No. 2.

FOLLOWING closely on the varieties referred to last week, indeed not infrequently ripening contemporaneously with some of them, are many Pears of recognised value. As a worthy

example of September Pears we figure this week the fine, free-growing, good-bearing, and excellent Pear *Beurré d'Amanlis*. Our experience of this variety is, that it is one of the hardiest and most reliable Pears of its season. It will thrive over a very wide district of the country, whether grown on the Pear on Quince stock; but on the latter the fruit is occasionally gritty when the trees are grown in shallow soils in dry localities. It makes a fine espalier on the Pear, and a handsome pyramid on the Quince; in fact, so generally satisfactory do we find *Beurré d'Amanlis*, that perhaps the most useful information that can be afforded respecting it is for cultivators to state where and under what conditions it does not succeed, and

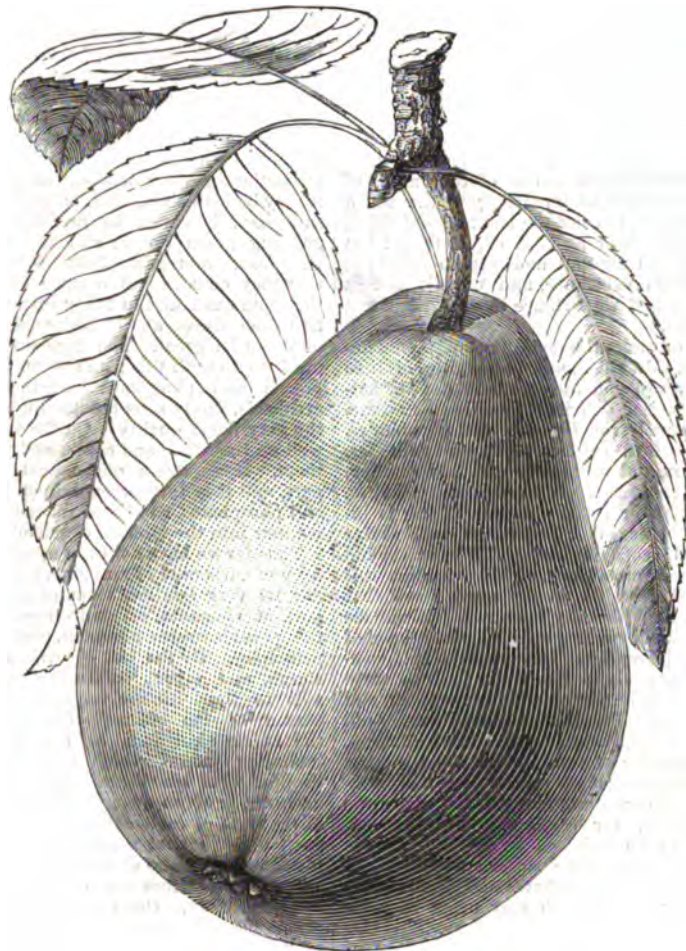


Fig. 51.—BEURRE D'AMANLIS.

whether it has proved serviceable as standards for orchards. Before, however, information is submitted in reference to this Pear it will be well to wait until a few other varieties ripening about the same period are submitted, so that the September Pears can be considered in a group the same as the earlier varieties mentioned last week. We recommend this course as the most convenient for all. *Beurré d'Amanlis* has been stated to be a seedling of Van Mons, but as is stated in the "Fruit Manual," it is probable that it is a native of Brittany.

We have received some valuable communications on Pears, but only a few of the writers have confined their remarks to the early section, having referred also to late varieties; therefore only a portion of the communications can be inserted at present.

#### THE CHEMISTRY OF GARDEN CROPS.

To the gardener the chemistry of crops is a matter of great importance, because he cannot restrict his operations to such crops as the land is particularly adapted for, but must endeavour to render his land capable of carrying more or less of all

the vegetables and fruits that find a place in the catalogue of domestic wants. Plants consist of two classes of constituents—the Inorganic, which may be called the foundation; and the Organic, which may be considered the superstructure. The first alone concerns us now. A plant must derive from the soil certain proportions of silica, lime, sulphur, salt, phosphates, alkalies, and other minerals, or it cannot exist at all; but given these, and its production of fibre, starch, gum, sugar, and other organic principles, will depend very much upon the action of light, heat, atmospheric air, and moisture upon it, for these have to be produced by chemical (or vital) action within the structure, or, as we sometimes say, the tissues of the plant itself. To a very great extent the agencies that conduce to the production of organic principles are beyond our control (though not entirely so), whereas we can directly, and to a very considerable extent, provide the plant with the minerals it more particularly requires; first, by choosing the ground for it, and next by tilling and manuring in a suitable manner.

Garden soils usually consist of loam of some kind, the consequence of long cultivation. Natural loams are the result of the decay and admixture of various earths, and they are



mostly of a mellow texture, easily worked and highly productive. They are, as a rule, the best of all soils, and their goodness is in great part due to the fact that they contain a little of everything, with no great predominance of any one particular earth. Cultivation also produces loam. On a clay land we find a top crust of clayey loam, and on a lime or chalk land a top crust of calcareous loam, where cultivation has been long pursued, for the staple is broken and manures are put on, and the roots of plants assist in disintegrating and decomposing, and thus there is accumulation of humus and a decomposition of the rock proceeding together, and a loam of some sort is the result. Hence the necessity of caution in respect of deep trenching, for if we bury the top soil and put in its place a crude material that has not before seen daylight we may lose ten years in profitable cropping, because we must now begin to tame a savage soil that we have been at great pains to bring up to cover a stratum of a good material prepared for us by the combined operations of Nature and Art during perhaps several centuries. But deep and good garden soils may be safely trenched and freely knocked about, because not only does the process favour the deep rooting of the plants, but it favours also that disintegration which is one of the causes of fertility. Every pebble is capable of imparting to the soil a solution—infinitesimal perhaps, but not the less real—of silica, or lime, or potash, or phosphates, or perhaps of all these; but it must be exposed to light and air and moisture to enable it to part with a portion of its substance, and thus it is that mechanical tillage is of the first importance in all agricultural and horticultural operations.

The principal inorganic or mineral constituents of plants are potash, soda, lime, sulphur, salt, silica, and phosphates of lime and iron. Clays and loams are generally rich in potash, sulphur, salt, and phosphates, but deficient in silica and lime. Limestone and chalk are usually rich in lime and phosphates, but deficient of humus, silica, sulphur, salt, and alkalies. Sandy soils are rich in silica, and are rarely deficient of lime, but are generally poor in respect of phosphates and alkalies. Therefore, in manuring a clay or loam, farmyard dung is invaluable because of the silica it contains, as well as for other ingredients that all crops appreciate. The occasional application of lime also is of importance, and not seldom this produces an almost magical effect on an old garden soil that has been heavily cropped and liberally manured. Calcareous soils are also greatly benefited by a free application to them of manure from the stable and cow-byre; but it would be, generally speaking, like carrying coals to Newcastle to dress these soils with lime. But clay may be put on with advantage; and nothing benefits a hot chalky soil more than a good dose of old mud from ponds and ditches, supplying at once humus, alumina, and silicates. In the manuring of sandy soils great care is requisite, because of their absorbing power. In the bulb-growing districts of Holland cow dung is worth the enormous price of 1s. per barrow-load, for digging into loose sand for a crop of Potatoes, to be followed by bulbs. This is an exceptional case, but it illustrates the subject usefully. As a rule, sandy soils are deficient of phosphates and alkalies, and hence, instead of employing dung, which may often be more usefully bestowed upon the loamy pieces and reserved for special purposes, it will be found that kainit (a rough form of potash) and superphosphate of lime will conjointly produce the best results, more especially in raising Potatoes, Onions, and Carrots, which are particularly well adapted for sandy soils. Probably the best universal manure is genuine Peruvian guano, for it contains phosphates, alkalies, and silicates in available forms and suitable proportions. In any case, however, a manure should be selected by analysis, and with a view both to correct the deficiencies of the soil and satisfy the requirements of the crops to be grown on it.

For the present purpose the principal garden crops may be grouped in two classes, in accordance with the predominance of certain of their mineral constituents. The figures show the average proportions of the several minerals per cent. in the ashes that are left after burning a sample.

In Class 1 phosphates and potash predominate. This class includes the following:—The Pea, containing phosphates, 33; potash, 36. The Bean: phosphates, 31; potash, 42. The Potato: phosphates, 12; potash, 53; lime, 2; magnesia  $5\frac{1}{2}$  to 7 or 8. The Parsnip: phosphates, 18; potash, 36; lime, 11; salt, 6. The Carrot: phosphates, 8; potash, 32; soda, 13; sulphuric acid, 6; salt, 6. The Jerusalem Artichoke: phosphates, 13; potash, 54.

In Class 2 sulphur, soda, and salt predominate. This class

includes the following:—The Cabbage: phosphates, 12; potash, 11; soda, 20; lime, 20; sulphuric acid, 21. The Turnip: phosphates, 9; potash, 28; salt, 16; lime, 23; sulphuric acid, 12. The Beet: phosphates, 4; potash, 23; soda, 19; salt, 24; lime, 1.

As a matter of course, Lentils and other kind of pulse agree more or less with Peas and Beans in the predominance of phosphates and potash. So, again, all the Brassicas, whether Kales, Cauliflowers, or whatever else, agree nearly with the Cabbage in a predominance of lime and sulphur, ingredients which fully account for the offensive odour of these vegetables when in a state of decay. Fruits are mostly highly charged with alkalies, and are rarely deficient in phosphates; moreover, stone fruits require lime, for they have to make bones as well as flesh when they produce a crop. As regards the alkalies, plants appear capable of substituting soda for potash under some circumstances, but it would not be prudent for the cultivator to assume that the cheaper alkali might take the place of the more costly one as a manurial agent, for Nature is stern and constant in her ways, and it can hardly be supposed that a plant in which potash normally predominates can attain to perfection in a soil deficient in potash, however well supplied it may be with soda. The cheaper alkali in combination with salt may, however, be usefully employed in aid of quick-growing green crops; and more or less with tap-roots and Brassicas. As regards Potatoes, it seems worthy of observation that they contain but a trace of silica, and yet they usually thrive on sand, and in many instances crops grown on sand are free from disease and of high quality, although the dead weight may not be great. The mechanical texture of the soil has much to do with this; and when that is aided by a supply of potash and phosphates, whether from farmyard dung or artificials, sandy soils become highly productive of Potatoes of the very finest quality. On the other hand, Potatoes also grow well on limestone and chalk, and yet there is but little lime in them. Here, again mechanical texture explains the case in part, and it is further explained by the sufficiency of potash and phosphates, as also of magnesia, which enters in a special manner into the mineral constitution of this root.

Thus far we have not even mentioned nitrogen, or its common form of carbonate of ammonia; nor have we mentioned carbon, nor its very familiar form of carbonic acid. These are important elements of plant-growth. By the aid of nitrogen the plant secretes albumen, gluten, and other "nitrogenous" principles. By the aid of carbon it secretes vascular tissue, starch, and other "carbonaceous" principles. Both these aids to plant life are required in the soil, and hence one reason of the efficacy of manures derived directly from the animal kingdom, as, for example, the dung of animals, including guano, which consists, in part at least, of the droppings of sea birds. The nitrogen in these substances, however, is of an evanescent character, and rapidly flies away in the form of carbonate of ammonia; hence a heap of farmyard dung left for several years becomes almost valueless as manure, and guano should be kept in bulk as long as possible, and protected from the atmosphere, or its ammonia will disappear rapidly. One reason for the activity of chemists and others in the preparation of artificial manures is the difficulty of "fixing" the needful ammonia so that it may be kept from combining with the atmosphere, and at the same time be always in a state in which it can be appropriated by the plant. We cannot supply plants with nitrogen directly, but in all good manures there is a certain proportion of it in combination, and in many instances the per-centage of nitrogen is made the test of the value of a manure. The importance of humus in a soil is that by its decay it supplies the plant with carbonic acid, of which it consumes enormous quantities. Thus manures that are valueless by the nitrogen test may still be valuable as generators of carbonic acid. Vegetable refuse of all kinds, whether leaves, spoiled hay, sawdust, cocoa-nut fibre, &c., may be regarded as possible elaborators of carbonic acid, and therefore of great service when dug into the soil. But we obtain useful herbage, at all events, if we do not obtain corn and wine and oil, from lands that appear almost destitute of nitrogenous substances and humus. We therefore conclude that the useful herbage and the whole of the vegetation on these lands depend for their nitrogen and carbon on the atmosphere. But when we take such lands into cultivation, the herbage it naturally produces does not suffice us, and we break up the staple that decomposition may liberate more abundant supplies of plant food, and we put on such fertilising agents as are best adapted to rectify the natural deficiencies of the

soil, so far as the means at our command enable us to meet the requirements of the case as indicated by chemical considerations.—(Abridged from Sutton's *Anatours' Guide*.)

### JUDGING COLLECTIONS OF FRUIT.

ON page 331 of the Journal of October 23rd Mr. Witherspoon submitted for consideration a system of judging by points the competing collections of fruit at public exhibitions. As yet I have not observed that any of our well-known fruit exhibitors or fruit judges have expressed an opinion on the merits of the plan indicated by Mr. Witherspoon. My own opinion is, that the system is worthy of consideration. If carried out exhibitors would have the satisfaction of knowing the grounds on which the judges arrived at their decision as regards the respective merits of the competing collections. I should like to hear through your columns what others interested in fruit-exhibiting have to say for or against the plan of judging as suggested by your correspondent.—EXHIBITOR.

### BRITISH FERNS.—No. 2.

CONTINUING the subject from last week, I now refer to the remaining British genera.

*Lastreas* are rather numerous, for there are eight distinct species. *L. annula*, or Hay-scented Buckler Fern, is a beautiful plant and the best suited for pot culture. I have two plants in my collection—one from Ireland, the other collected near this town, and is much better than the Irish one, being closer and more compact in its habit. *L. cristata*, or Broad Buckler Fern, is a bold-fronded plant. The name was given to it by Linnaeus from a fancied resemblance to the crest of the peacock in the way it produces its fronds. *Spinulosa* and *uliginosa* are considered to be varieties of the above by some, but I doubt it. *L. dilatata* has several good varieties. *Grandiceps* is the finest crested variety that I have ever seen, and was raised by Mr. Barnes of Levens. He has another type raised at the same time; it is also crested, but differs from the above. I have also one from Mr. Clapham, which he kindly gave me when I visited his fernery last year, and a beautiful plant it is. Mr. Clapham named it *grandens*. *Cristata gracilis* is another good variety, and much like the last-named. The next species is the *Lastrea Filix-mas*, a plant that most are acquainted with that know anything about Ferns, and many of its varieties are worthy of places in every fernery. *L. F.-mas cristata*, which by some is styled the "King of Male Ferns," was collected in Cornwall, and no doubt will hold its place as a first-class plant, although it is now in every large fernery in the kingdom. *L. F.-mas cristata angustata*, a seedling raised from the above, is very good. *L. F.-mas var. crispata* is much admired and quite unique, differing from the common type in the widest manner imaginable. The fronds are 9 or 10 inches in length and very much imbricated, giving to the plant a compact and exceedingly pretty appearance. It is from Wales, and was sent out by Mr. Appleby of Balby near Doncaster. There is also a crested variety raised from the above, which is very good and worthy of notice. *Crispatissima* is another fine variety, and was raised by Mr. T. Bolton of Warton near Carnforth. Its crispy appearance and shuttlecock habit of growth combine to make it an object of great beauty. The variety *grandiceps* is said to be the finest crested form of the true *L. F.-mas* ever found, and it is without doubt a grand variety. *Ramo-cristata* is also a fine plant, and was raised by the above Mr. Bolton. *L. Oreopteris*, or *montana*, is to be found in abundance about Bell Hagg and Rivelin. The varieties of this Fern are few, and the best I have seen are in the possession of Mr. Barnes of Levens, and have been found in the Lake district. The first I will refer to is unique, and was named *Barnesii* by Mr. Moore. It is a beautiful plant of upright growth. In the same collection are several very good crested varieties.

*Ophioglossum vulgatum*, or Common Adder's-tongue.—There is one variety of this plant named *lusitanicum*.

*Osmunda regalis*, or Royal Fern.—I found several plants of this noble Fern some years ago near Ashopton in Derbyshire, and have one of them in my possession which has produced this season fronds over 5 feet in length. This plant also grows near Sheffield, but there are few plants to be found now in these parts. There are several varieties, but I shall only refer to one—*cristata*, a very handsome plant. I think it almost impossible for any person to see a superior specimen without being smitten by its beauty.

*Polypodiums*.—There are five distinct species in this class.

The first four are not given to sport, so as to produce any varieties of note. *P. alpestre*, or Alpine Polypody; *P. Dryopteris*, the much-admired Oak Fern; *P. Phegopteris*, or Beech Fern; and *P. Robertianum*, or *calcareum*, are the four. I leave these to speak of the *P. vulgare* and its numerous varieties, which are very beautiful. Most, if not all, are acquainted with *P. cambricum*, and cannot fail to admire it; but this fine variety has now many rivals. *P. elegantissimum* was found in Cornwall, and first sent out by Messrs. Stansfield & Son. It is exquisitely delicate, and much resembles the beautiful Killarney Fern. It is by far the most attractive of all the varieties. The next in order is *P. Prestonii*, which was collected by Mr. Preston in Silver Dale, and is a splendid variety of the *Cambricum* type.

*Polystichums*.—In this genus there are three distinct species. The first (*aculeatum*, or Prickly Shield Fern) is of a rich glossy green and of a good habit, and some of the varieties are very good. The following are a few of the best:—*Acrocladon*, a splendid form of the *grandiceps* type; *cristata gracile* is very good; and *proliferum* is also very good, and finely divided. The well-known *P. angulare* is a fine plant, and has produced many beautiful forms. The following are a few of the best:—*Cranfordianum* *Footii*, *Hemleyii*, *lineare*, *proliferum*, *tenue*, *Wollastoni*, and lastly *Brearlui* (the original plant of this variety is in my own collection). There are also many fine crested varieties, and also the handsome variety *plumosum* and *Pateyi*, two plants of great merit and beauty. The third plant in this class is *P. Lonchitis*, a fine plant when well grown, which is not often the case.

*Pteris aquilina*, or Common Brake. Some readers will expect to hear but little of this. There are, however, several varieties of great merit. I saw some of these at Mr. Barnes's last year which surprised me; and semi-crested plants of great beauty, which he had collected on the hills and established in his own grounds.

*Scolopendrium vulgare* is the only species in the British Isles, but the varieties are very numerous indeed. These amount to about five hundred, and, as Mr. Stansfield remarks when speaking of this Fern, "it is the most remarkable of all Ferns, its named varieties are now counted by hundreds." I will now refer to a few of the best I am acquainted with. *S. Coolingii* is the best crested variety I remember to have seen; the true plant is a gem. *S. crispum* is a good old variety. Next we have the crested and crenate varieties of *crispum*. Then we have *coronatum*, a new variety, of good habit and great merit. *S. ramo-digitatum* is a very fine form, much branched and crested. It was found by Mr. T. Bolton of Warton on Warton Crag.

*Trichomanes radicans*, or Irish Bristle Fern, is one of the most attractive of our native Ferns, and its fronds will after they are fully developed continue fresh and beautiful much longer than those of any other species. The varieties of this lovely Fern are few but very good. *T. Andrewsii* is a plant of great beauty, and deserves a place in every collection. *Dilatatum* and *dissectum* are also good. There is, too, a Welsh plant of this class which is considered by some to be better than the Irish species.

*Woodsias*.—The species *alpina* and *Woodsia ilvensis* are only to be found in the north, and when found are rather shy in cultivation and of no special interest to the Fern cultivator.—JNO. EADON, *Sheffield*.

### BRANCEPETH CASTLE,

THE SEAT OF VISCOUNT BOYNE.

THE magnificent cathedral and castle of Durham standing out so prominently to the view of the spectator are objects which at once inspire the impression that he is near a city of importance: indeed, one richer in historical lore is not to be found in Great Britain, and no visitor to the north should miss an opportunity of seeing it.

Among the many old castles of the county there is none older than Brancepeth. In olden days it was a well-known custom that when a castle was to be built a license was granted for the purpose; but in none of the old archives can such be found relating to Brancepeth, which proves beyond doubt the antiquity of the building, belonging as it did to the Nevilles, a family renowned for their valour—in fact, as noted as the Percys of Northumberland, with whom they were contemporary. The Nevilles are stated to have come over with the Conqueror. Geoffrey de Neville, who married the heiress of Bertram Bulmer and inherited these estates, which the ancient

family of Bulmer retained a long time. The Castle is a very fine building. Leland describes it as "strongly set and builded, and hath two courts of high building. In this court be three towers of lodging, and three smaule adornments." Hutchinson describes it: "Within the wall are a spacious area, which you enter from the north by a gate with a portcullis, and defended by two square towers." The north and east sides have been defended by a moat. The west and south sides are built on a rock 40 feet high, with a brook at the foot. The interior of the Castle is quite princely. The barons' great hall contains the suit of armour won by King David at the battle of Neville's Cross; and at the end of this apartment is a rich stained window, which contains three distinct views of the noted battle of Neville's Cross. There is also a very large corridor, which is full of coats of mail and armour. The whole place is well furnished and in unison with the rest of the Castle.

About a century ago it was purchased by Mr. Russel, who pulled part of it down and had it rebuilt in the same style of imposing architecture. There is also a very fine church which the public have the use of; it is very ancient too, and contains the ashes of many members of the Neville family. So old is it that at the east end still remains the small belfry for ringing the angelus. The name of Brancepeth springs from "The Brawn's Path," as in those days it was supposed to be the walk of a very fierce one, which was destroyed by one of its lords, hence its name. The seventh Viscount Boyne, the descendant of the house of Hamilton in Scotland, married the daughter and sole heiress of Matthew Russel, Esq., M.P., of Brancepeth, and at the latter's death in 1850, on attaining the estates, he assumed the surname and arms, and the present nobleman is his son and the eighth viscount.

The flower garden is near to the west side of the Castle, and was formed about 1854 by Mr. Dale, the gardener. There is a Rose garden and also a very neat Box garden, in which the monogram "E. M. B." of the late Countess Emma Maria Boyne is artistically cut out in Box, also is embedded the Shamrock, the Rose, and the Thistle. The beds in the flower garden were very neatly filled with well-selected flowers. We observed some fine beds filled with Dickson's yellow *Viola*, *Ageratum* Cupid—a very fine colour, lately sent out by Messrs. Downie and Laird—Flower of Spring *Pelargonium*, *Pyrethrum*, and *Viola* Perfection. Overlooking the dell or glade into the brook is a Rose terrace, which enhances considerably the surroundings. This glade was all laid out by Mr. Dale too, and must have been a work of uncommon difficulty owing to the steep and rugged ascent. The bank is planted with fine clumps of *Rhododendrons*. We also observed a beautiful Spanish Chestnut and good specimens of *Wellingtonia gigantea*; but forest trees and shrubs do not flourish well, owing to the smoky nature of the neighbourhood, which is entirely surrounded by collieries.

A walk of a quarter of a mile or so brings you from the Castle to the kitchen gardens, which are over 4½ acres, and are divided into two divisions by a wall. A large part of it has been reclaimed from a bog at considerable expense and trouble. We were shown Peas sown in March which were still bearing at the time of our visit—the end of September. Brussels Sprouts were also good in comparison with what they are in many places in the north this year. Broccoli was also healthy, and seemed well prepared to withstand the winter, Messrs. Veitch's Autumn Protecting being here an indispensable favourite for early work. Asparagus we observed was grown in narrow beds of 3 feet and well raised up. By this method good Asparagus is procured, which could not be obtained by the usual method, owing to the boggy and wet nature of the soil. Pears and Apples were not a heavy crop. Amongst Pears as standards Muirfowls Egg was a very good crop, and does well at Brancepeth.

In the inner division of the kitchen garden is situated the glass houses, and in the centre of the range is the conservatory. From here runs a walk 8 feet broad, which divides this portion of the garden equally, and the border on each side was bedded out effectively with ribbon borders of Kaiser William *Lobelia*, Cloth of Gold and Violet Hill *Pelargoniums*, *Pyrethrum*, and *Perilla nankinensis*, and in the background at equal distances were planted Irish Yews, which gave a finished effect; and in the centre of the walk was an octagon fountain, where another walk joins at right angles. The conservatory was designed by Mr. Weeks of London, and is 43 by 30, with a little glass portico for the entrance. Amongst the climbers trained against the wall we noticed an old favourite—*Swainsonia galegifolia*, with its charming Pea flowers so profusely scattered all over

the plant. How seldom this plant is seen! and what can be finer for a greenhouse, flowering at all times so profusely, and of such easy culture? also *Clematises*, *Lapageria rosea*, and *L. alba* gracefully intertwining in each other. There was also a very fine specimen of *Phormium tenax variegata*, and the usual decorative plants.

From here you enter the early and late Peach houses on your left, 36 by 21 respectively. In the late house were Pine Apple Nectarine, Early Savoy and Princess of Wales Peaches; and the early house contained Newington Nectarine, Belle-garde and Royal George Peaches. The trees all looked very healthy, and had made excellent growth. Returning through the conservatory again we were shown into late vineries 80 by 28 feet, and containing *Barbarossa*, *Muscat of Alexandria*, *Mra. Pince*, *Raisin de Calabrie*, *Alicante*, and *Golden Queen*. The bunches were very evenly distributed over the house, and of good table size. There was a large lean-to stove filled principally with decorative plants, Orchids, &c.; another vinery for early work and a lean-to greenhouse completed this range. Outside of this house we were shown a Jargonelle Pear planted by Mr. Dale's father at the time he made these gardens in the year 1820. It is also worthy of record here that Mr. Dale and his respected sire have been in the service of the Brancepeth family for over eighty-nine years. Near to Mr. Dale's house are the Pine pits, the successional house being 43 by 21 feet, and in one end of the plunging bed were planted out specimens of *Eucharis amazonica*, and they were bearing a number of spikes. The successional Pines were all very fine and healthy. The fruiting house is 60 by 24 feet, span-roofed, with a side stage, in which some excellent plants of *Calanthe vestita* were looking extremely well. There has been a remarkable freak of Pine growth here which is worthy of record, as many as six small fruits being thrown up in some instances—and all about the size of a goose egg—ripening and swelling their pipe well. No particular reason can be given for this; it has only occurred within this last year or so. Mr. Dale thinks that it is owing to the polluted state of the neighbourhood with smoke of all kinds, some chemical or alkali deposit has been placed in the turf which they were potted in. Mr. Dale has had the top thinly pared. The plants have all been now repotted in the new pared turf, and seem to have completely recovered. Pine Apple culture has always been one of the great features at Brancepeth, and all the leading varieties are grown.

The gardener's house is worthy of mention from the fact that the entrance room is entirely devoted to a collection of stuffed birds, animals, serpents, fishes, and cabinets full of the rarest kinds of eggs; in fact a veritable little museum, all the specimens having been gathered and preserved by Mr. Dale himself, the result of a life-long labour. We also saw a handsome volume of Mr. Waterton's work, which had been presented to Mr. Dale by that distinguished author and naturalist in recognition of his services in the above sciences.—B. COWAN.

#### SAXIFRAGA FORTUNEL.

I HAVE proved this Saxifrage to be a useful autumn and early winter-flowering plant for the greenhouse and conservatory, but I had no full conception of its merits as a decorative plant until recently. In a large conservatory I saw this Saxifrage arranged in large numbers. The plants were in 7-inch pots, and were bearing fine bright foliage and sturdy flower stems about 18 inches high, displaying their pretty white flowers in profusion. It is readily increased by division, and appears to form seed pods freely, but I have not yet tried to increase it by seed. The spring and summer is the best time for propagation. The pots should be thoroughly drained, employing a compost consisting of sandy loam, peat, and leaf soil in equal quantities, a little charcoal dust, and coarse sand. Care must be exercised in watering the plants until they begin to make free growth, then they will require it more liberally. I find them succeed during the summer placed in a partially shaded situation on a firm bottom of ashes.—SAXUM.

AMERICAN CANNED GOODS.—The trade in this is of great magnitude. We learn that from four to five millions of cans of Peaches, Tomatoes and corn, from eight to ten millions of cans of fruit, and from six to ten millions of cans of vegetables, are packed annually in the City of Baltimore alone. Pickles, sauces and preserves are also canned there and sent to all parts of the world; the Hindoos,

Japanese and Chinese, as well as Europeans, being among the customers. A leading dealer states that the trade in canned goods is ten times larger than it was four years ago, and that this has been occasioned by the addition of new articles, in both the fruit and vegetable lines, to the business. A single Broad Street firm sold last year six hundred thousand sealed cans of Tomatoes alone, besides shiploads of Boston baked Beans, Peas, corn, &c., not counting the goods usually sealed in glass jars and bottles under the head of catsups, sauces and preserves.

### FOLK-LORE OF THE HOLLY AND MISTLETOE.

ONE of the most popular plants at this season is the Holly, which, with its dark shiny leaves and bright red berries, is much in request for dressing up our churches and houses at Christmas. On this account one of its popular names is "Christmas." The term Holly is in all probability a corruption of holy, as this plant has been used from time immemorial as a charm against evil influences. Hence it was hung round or planted near houses as a protection against lightning. Its common use at Christmas is, says Mr. Napier in his "Folk-lore of the West of Scotland" (1819, p. 121), "apparently the survival of an ancient Roman custom occurring during the festival to Saturn, to which god the Holly was dedicated. While the Romans were holding their feasts, which occurred about the time of the winter solstice, they decked the outsides of their houses with Holly. At the same time the Christians were quietly celebrating the birth of Christ, and to avoid detection they outwardly followed the custom of their heathen neighbours and decked their houses with Holly. In this way the Holly came to be connected with holy also." It is curious that Shakespeare only once mentions the Holly, and then in "As You Like It" (Act ii., Sc. 7). Holly is used in some districts for divination. Thus in Northumberland we hear of a he-Holly and a she-Holly, according as it is with or without prickles, the leaves of the she-Holly being alone deemed proper for divination. These must be plucked late on a Friday night by persons careful to preserve an unbroken silence from the time they go out to the next morning's dawn. The leaves must be collected in a three-cornered handkerchief, and on being brought home nine of them must be selected, tied with knots into the handkerchief, and placed beneath the pillow. Dreams worthy of all credit will attend this rite, and no small importance is consequently attached to them, as they are supposed, in the most unerring manner, to predict future events. The Holly on account of its prickly leaves is much used for hedges. John Evelyn, in his Diary, alluding to this plant, asks, "Is there under heaven a more glorious and refreshing sight of the kind than such an impregnable hedge, glittering with its armed and varnished leaves, the taller standards at orderly distances blushing with their natural coral?" Evelyn had such a hedge at Say's Court, 400 feet long, 9 feet high, and 5 feet broad, which he planted at the suggestion of Peter the Great, who resided at his house while he worked in the Deptford Dockyard.

The Mistletoe from the earliest times has been an object of interest to naturalists on account of its curious growth, deriving its subsistence entirely from the branch to which it annexes itself. Thus Herrick describes it as—

"The mystic Mistletoe,  
Which has no root and cannot grow  
Or prosper but by that same tree  
It clings about."

The Greeks and Romans both knew of this plant, and the Druids held it in the greatest veneration. The ceremony of gathering it at the commencement of the year was performed with every kind of pomp. The Druid priests, we are informed, went in solemn procession into the forests, where they raised a grass altar at the foot of the finest Oak on which the Mistletoe was found growing, and inscribed on the trunk of the tree the names of the most powerful among their deities. The Chief Druid, clad in white robes, then ascended the tree, bearing a consecrated golden pruning-hook, with which he cropped the Mistletoe, and dropped it into a "white sagram," or pure white cloth of wool, held out beneath the tree by the remaining priests. Should any part of the plant accidentally touch the ground, it was considered to be an omen of some dire misfortune about to visit the land. This ceremony was celebrated on the sixth day of the moon, and when it was concluded a sacrifice was made of two white bulls. Our practice of decorating houses at Christmas with Mistletoe is

probably a remnant of this superstitious custom. Brand thinks that this plant was never put up in churches except by mistake or ignorance of the sextons, "it being a heathenish and profane plant, distinguished in pagan rites." It is certain, however, that during the feudal ages the Mistletoe was gathered with much solemnity on Christmas eve, and hung up in the great hall with loud shouts of rejoicing. In many country places the entire plant is still hung up in the kitchens of farm-houses, &c. Various superstitious notions are still attached to it, which too are not confined to our own country. Shakespeare alludes to it in his "Titus Andronicus" (Act ii., Sc. 3), and calls it the "baleful Mistletoe," and Gay styles it the "sacred Mistletoe." In Halstein the Mistletoe is the "mären-taken," or "branch of spectres," and is supposed to confer upon its possessor the power of seeing ghosts. No allusion to kissing under the Mistletoe is met with earlier than the middle of the seventeenth century.—(REV. T. THIBELTON DYER, M.A., in "*Leisure Hour*.")

### WORK FOR THE WEEK.

#### HARDY FRUIT GARDEN.

WHEN the weather is open the planting of fruit trees should be proceeded with. Proceed also with the pruning if necessary of such trees against walls as the Cherry, Plum, and Pear, also the Apricot, Peach and Nectarine, but in the case of the Peach and Nectarine pruning would be preferably deferred until spring. Whenever the condition of fruit trees appears in any respect unsatisfactory the roots should be carefully examined. In cases of exhaustion remove the surface soil carefully so as to expose a considerable portion of the roots, especially near the stem, carefully avoiding injuring them, and then cut away all dead or decayed roots. Employ for filling-in a compost of two parts of good turfy loam well chopped up and a third of thoroughly decomposed manure, and if the soil be deficient in calcareous matter a tenth part of old mortar rubbish may be added with advantage, working the fresh compost in amongst the roots, covering them 8 or 4 inches deep, and mulching the surface with short stable litter. Excessive luxuriance in fruit trees can generally be remedied by judicious root-pruning. Standard trees should receive attention, removing all superfluous shoots or branches, especially where much crowded and those crossing each other, but avoid pruning too severely, as that will only tend to an increase of growth. Locality and the nature of the soil have greatly affected the quantity and quality of the fruit, and where the soil and climatic conditions are most favourable the least aid will be required, but in most instances timely attention will be necessary to prevent entangled growth. Old trees that are becoming unproductive, or where the variety is of inferior quality, or from being affected by canker is unsuitable to the climate and soil, may be headed back and grafted in March with varieties that have been found to succeed. In forming plantations of fruit trees it is always advisable to plant largely such varieties that have been proved to be well suited to the locality. Improved or new varieties should be tried on a small scale prior to extensive planting. Were this done much after disappointment would be avoided. During inclement weather cuttings of Gooseberries and Currants may be prepared; young shoots of the most vigorous and straight wood should be preferred. Cut away the immature points and remove all the eyes except three or four of the uppermost. Tie the cuttings in bundles and label them according to their varieties, placing their ends in moist soil until they can be planted in borders outside.

#### FRUIT HOUSES.

**Pines.**—In most establishments where Pine Apples are grown there is a demand for ripe fruit in May and June, and it will be necessary to take into consideration the present condition of the plants that are intended to afford that supply. Where a sufficient number of Smooth-leaved Cayenne, Charlotte Rothschild, Black Jamaica, Black Prince, with Montserrat failed to show fruit during October and November, and as the fruits starting now will not be ripe at the requisite time, plants of the Queen, Providence, and Enville varieties, which require less time to arrive at perfection, should be induced to start their fruit. Select from the successional stock plants that have been subjected to somewhat cool and dry treatment, choosing those which have an enlarged base with a tendency to open at the centre. Place them in a light house or pit, and plunge them in a brisk bottom heat of 85° to 90°, the atmospheric heat ranging between 60° and 70° at night according to external conditions, allowing from 5° to 10° more by day. A genial atmospheric moisture must be kept about the plants, but not by steaming intensely from hot-water pipes or syringing the bed between the plants, but by occasionally damping cool surfaces about the house. The soil must be examined once a week, employing tepid water with a little guano in it, applying it copiously when needed.

**Cucumbers.**—The weather of the past few weeks has necessitated sharp firing, and one consequence is weak and attenuated growth.

Light is very important in the cultivation of the Cucumber in winter, and now the days are so short keep the glass as clean as possible both inside and out. Do not supply strong liquid manure too freely, as it is the reverse of good treatment to stimulate them unduly at any time. The soil, however, applied to the roots should be rich and sweet. Be careful not to overcrop the plants, and do not allow the fruits to hang too long; they keep fresh several days after being cut if the heels are inserted in saucers of water in moderate heat. Remove superfluous fruits as they appear, and tie the growths as necessary. Red spider is sure to appear during a period of sharp spring. Sponging with a weak solution of soft soap, 2 ozs. to the gallon, is the safest remedy; and if mildew appear dust the affected parts with flowers of sulphur, and reduce the atmospheric moisture. Green or black aphides may be destroyed by dusting them with tobacco powder. Where early Cucumbers and Melons are obtained from frames or pits heated by fermenting materials, some fresh Oak or Beech leaves should be thrown together, with one-third of stable litter, and if necessary be moistened so as to induce fermentation, and should be turned over so as to induce thorough incorporation of the materials.

**Peaches and Nectarines.**—Cease syringing the trees in the earliest house when the flowers show colour, maintaining, however, a moderate moisture in the house by damping the floor, &c., on bright mornings and in the early part of bright afternoons. The temperature may be maintained at 55° by day, ventilating freely from that degree upwards; close at 55°, 56° being sufficiently high for the night, and if the temperature fall to 45°, and in very sharp weather 40°, it will be more an advantage than otherwise. Examine the inside borders, and give if necessary a thorough supply of water at a temperature slightly in advance of that of the house. The trees for affording fruit fit for use at the close of May or early June should have their final dressing, be tied to the trellis, and the border inside be well watered. The house should then be closed, employing no fire heat except to exclude frost, damping the trees and house in the morning and early afternoon of bright days. Fire heat should not be applied by day to raise the temperature above 50°. The outside border should be protected with dry fern or litter, and if means are at command for throwing off heavy rains or snow it will be desirable to employ them. Push forward the pruning and dressing of trees in succession and late houses, carefully examining the inside borders, as dryness at the roots will cause the buds to fall later on.

#### PLANT HOUSES.

**Greenhouse.**—The earliest plants of herbaceous Calceolarias will require to be shifted into larger pots before they become root-bound. Calceolarias delight in a rich light soil, the following compost being well suited to their requirements:—Three parts fibrous loam, a fourth of leaf soil and well-decomposed manure, and a sixth of sand. The plants require a moist cool bottom to stand on, and plenty of air and light, with protection from frost. Show and Fancy varieties of Pelargoniums are very acceptable for conservatory decoration. Plants required to flower in May should now receive attention in staking. Vigorous young plants may have the points of the shoots pinched out; older plants that do not grow so vigorously will be better without stopping. The latest plants will now require potting. Fancy varieties should be similarly treated, placing them as near the glass as possible, keeping the temperature at about 40° at night and a few degrees higher by day, supplying no more water than is necessary to keep the soil a little moist, not, however, allowing the foliage to flag. In potting Pelargoniums care should be taken to ram the soil quite hard, light potting only encouraging leaf-growth. Be careful in watering Primulas, especially the double varieties, which are liable to damp off. Camellias swelling their flower buds may be assisted with weak liquid manure, especially weakly plants, and if the flowers are not opening freely afford a temperature of 50°.

**Orchids.**—Rest is of the greatest importance to Orchids, therefore be careful not to excite the plants into growth at this season. The temperature of the East India house should average 60° by day and 55° at night, Mexican house 55° by day and 50° at night, cool house 50° by day and 45° at night. Cool treatment at this season will induce a more vigorous growth subsequently. A very moist atmosphere at this season will cause serious injury; on the other hand, it should not be allowed to become too dry, or the stems and leaves will shrivel. Keep the glass clean, so that the plants have all the light possible. Plants of Dendrobium nobile that completed the growth early will have their flower buds in a forward state, and if placed in heat and supplied with a little water they will soon be in flower. By having plants in various stages a supply of flowers of this useful Orchid may be had from January to May. Plants for flowering at this last-named time should be placed in a greenhouse temperature and supplied with very little water until they begin to grow. Other Dendrobiums—such as D. densiflorum, D. Farmeri, and D. macrophyllum giganteum—not required to flower until May or June are easily kept back, they being now placed in a cool house and kept dry. It is very injurious to all plants, especially Orchids, to check the growth after it has once

started until it is completed. A good supply of sphagnum and peat should be placed under cover, spreading it on a damp floor.

#### TRADE CATALOGUES RECEIVED.

Ewing & Co., Eaton, near Norwich.—*Catalogue of Roses.*  
William Barron & Son, Borrowash, Derby.—*Catalogue of Forest Trees, Fruit Trees, and Roses.*  
H. Gusmas, Laibach, Austria.—*List of Alpine Plants and Hardy Perennials.*  
Suttons & Sons, Reading.—*Amateurs' Guide in Horticulture (highly illustrated).*  
Webb & Sons, Wordsley, Stourbridge.—*Spring Catalogue for 1880 (highly illustrated).*

#### TO CORRESPONDENTS.

**FUCHSIAS FROSTED (Adam).**—If when a portion of the bark is removed the wood is black the plants are probably killed, but if green they are alive. Yet even if they are killed above they may be alive below the soil, and in that case if cut down they will with good culture make fine flowering plants next summer.

**GRAFTING VINES (Puddle).**—We advise you to side-graft the Vines, affixing the scion to the main rod which is yet young. Obtain now a well-ripened scion at least 18 inches in length, and preserve it in moist soil in a cool place—out of doors will do—until the Vine in the house commences swelling its buds. Then take a slice from the middle of the scion 6 inches long and nearly down to the pith, also a corresponding slice from the stock for attaching the scion. Secure the two together with matting, and bind with moss, which should be syringed occasionally. Insert the lower 6 inches of the scion in a common wine bottle, which keep filled with water, the top portion having one eye or bud protruding from the moss. This bud will grow almost as freely as if it were a portion of the Vine. The stock need not be cut down, but the growth may be reduced in the summer as the graft extends. By this plan you ought to have a good cane the first season. Continue replenishing the water in the bottle until midsummer, or until the young rod reaches half way up the roof. Thanks for your letter about the Pear.

**PLATYTERIUM ALCICORNE (Idem).**—You may affix the plant to any flat piece of wood, but it would be better without bark, which is liable to decay and loosen the plants. It should be secured to the wood with copper wire and be syringed occasionally to encourage growth. The Seakale will answer admirably by the plan you propose, but light must be totally excluded. The Amaryllis bulbs may be nearly covered.

**SNAILS (Snail).**—The mollusc you have sent is *Limnea foemaria*. You have probably obtained the soil from near a ditch or stagnant water, and the "snails" you are now troubled with are hatched from eggs that have been deposited in the soil.

**CONIFERS INJURED BY WIND (An Irish Subscriber).**—We should not cut away the branches as you suggest so as to expose the stems, but should only shorten such that are greatly injured, and which prevent the growths above drooping, as they often will do, until they reach the ground. The thinner you make the shrubs at the base the more will the growth be injured by the wind. If you prune away all the lower branches we fear you will render the specimens more unsightly than they are now.

**STOCKS FOR PEAR TREES (A. D. S.).**—As your soil is of a dry and sandy nature the Pear would probably prove a better stock than the Quince; yet by making stations for the trees, by using stronger soil or even clay, and planting rather below than above the general level of the ground, and mulching the surface with manure, you may succeed with either the Pear or the Quince as a stock for the trees.

**SEEDLING APPLE (T. B. Morton).**—The seedling Apple is much like the Tulip Apple, but whether it is the same or not it is not worth preserving except for its high colour, which makes a good effect in the dessert.

**LARGE GOOSEBERRIES (Schoolmaster).**—Red—London. Wonderful, Dan's Mistake and Conquering Hero. Yellow—Catherine, Drill, Leveller, and Peru. Green—Shiner, Thumper, Stockwell, and General. White—Antagonist, Careless, Snowdrift, and Freedom.

**ASPIDISTRA LURIDA VARIEGATA (Doubtful, Briston).**—Although the plant will endure several degrees of frost as you have been informed, it is deserving of better care, as, when grown in a greenhouse, it forms one of the most useful plants in cultivation for the decoration of corridors and rooms. It is very largely grown on the continent, and is much appreciated for the adornment of hotels.

**EARLY PEAS (Young Gardener).**—As you omitted sowing during the mild weather in early September, and require Peas as soon as possible, you had better sow seed of William I. in turves, in a frame or a light house, and keep them there until the weather enables you to plant them out. They must be kept cool and well ventilated to induce slow sturdy growth.

**PLANTING RANUNCULUSES (Subscriber).**—The soil should be retentive of moisture. The best kind is the virgin mould of some alluvial soil on the banks of the river or some lowland pasture. If the soil should be thought too poor a small addition of decayed cowdung will be advisable; but it must be so decomposed as to appear like a black powder. Let it be thoroughly mixed with the soil whilst making the bed, in dry weather, about the month of September. Some time about the end of February or the day previous to March, rake the surface of the bed in the morning of the day previous to that fixed upon for planting. Commence by drawing with a hoe a drill across the end of the bed, 1½ inch deep; if deeper the roots will be weakened the succeeding year, by forming a kind of stem nearer the surface; and if shallower, the plants are more liable to be struck with drought. The drill being drawn the right depth press each bulb or tuber slightly down into the ground; plant them, if large, 4 inches apart in the row; if small, 3½ inches will be a sufficient distance. Cover the crown of each tuber with fine sand. This will cause the tubers, when they are taken up in July, to come out of the ground quite clean for keeping. Then, with a short-toothed rake, draw the soil over the bulbs, and when it is level, with the head of the rake gently press the soil pretty closely upon them.



**EVERLASTINGS FOR CUTTING** (*Idem*).—Of the numerous species and varieties suitable for the purpose you mention we select the following:—*Heliochrysum monstrosum* flore-pleno and its varieties album, roseum, atro-coccineum, purpureum, and luteum; *Xeranthemum annuum* flore-pleno and variety album; *Acroclium roseum* and album; *Ammobium alatum*; *Rhodanthe maculata*, *R. atrosanguinea*, and *R. Mangiesii*; *Helipterum corymbiflorum*; *Waltia corymbosa*, *W. grandiflora*; *Gomphrena globosa*, and varieties alba, aurantiaca, carnea, purpurea, and striata; *Statice Bonduelli*, *S. Thoudii*, *S. sinuata*, and *S. spicata*. The *Phloxes* are not adapted to forcing, but they might be retarded by adopting the treatment you describe.

**VARIOUS** (*J. B.*).—Gas cannot be burned without sulphurous fumes being evolved, and these are injurious to plants. A boiler and pipes would be far more satisfactory for heating your Rose house than any gas stove that has come under our notice, but we have not seen the stove to which you refer. As the manure you mention has not been advertised we have no means of ascertaining who are the vendors. We know of no Roses of the size you name; you may perhaps obtain the information you need by writing to the paper in which the sensational advertisement appeared. We know of no source near London for obtaining Briars except from nurserymen. Had you known as well as we do all the circumstances of the case in question, and the great distance involved, you would not have complained of the decision arrived at, and which was inevitable under the circumstances.

**GRAFTED VINES** (*J. A.*).—Provided you have ample room for the growth of both rods without overcrowding the foliage both the varieties will succeed on the same stock. The Mill Hill Hamburgh will probably prove the more useful of the two, the Black Muscat of Alexandria, though a delicious Grape is rather liable to shank. Your other question shall be answered next week.

**PRUNING VINES** (*Old Sub.*).—If you will send us a lateral cut off close to the rod we can the better reply to your question on pruning; we will also at the same time reply to your Chrysanthemum question.

**COMMERCIAL HORTICULTURE** (*J. R. J.*).—There are not many firms which grow both fruit and flowers extensively for market, but Mr. Thomson of the Tweed Vineyards, Clovenfords, Galashiels, does. The following are a few of the principal growers of plants for the London market:—Messrs. J. & J. Haye, Edmonton; W. & A. Brown, Hendon; Hawkins & Bennett, Twickenham; Beckwith & Son, Tottenham; Reeves, Acton; and Herbert, Richmond. Your friends had better visit those nurseries and make known their wants, and they will be certain to gather information that will be useful to them. Mr. Webber of the Central Avenue, Covent Garden, would be likely to inform you of the principal fruit-growing establishments near London.

**HEATING ARRANGEMENTS** (*Light Brahma*).—If you have two pipes from the feed cistern, one in connection with the flow and the other with the return pipes for heating the house, the water will circulate freely both in the pipes and cistern provided the arrangements are in other respects correct. By having valves in the pipes you can turn the heat on and off the house at will. You may force Rhubarb, Seakale, and Dwarf Kidney Beans in the house.

**AN INDIAN PLANT** (*M. S.*).—From your description we think the plant referred to is *Dischidia bengalensis*, a native of India, and first received in Europe from the Calcutta Botanic Garden. The plant is climatic in habit, succulent, and of a glaucous green colour. The stem is climbing, slender, and produces branching fibrous roots at intervals. The leaves are fleshy, elliptical, about 1½ inch long. The flowers are small, in axillary clusters, but are rarely produced in this country. It is related to *Asclepias*.

**EUPHORBIA GUM** (*Bicycle*).—We are unable to answer your question; perhaps you might obtain the information from a wholesale chemist.

**NAMES OF FRUIT** (*Subarber*).—1, *Susette de Bay*; 2, *Verulam*; 3, not known; 4, *Glou Morceau*. (*Coomber*).—2, *Nouveau Poiteau* (small); 3, *Glou Morceau*; 4, *Martin Sec*; 5, Not known.

**NAMES OF PLANTS** (*J. Charteris*).—1, *Lomaria gibba*; 2, *Pteris serrulata cristata*; 3, *Asplenium obtusatum*; 4, *Onychium japonicum*; 5, *Woodia livensis*; 6, appears to be a *Lastrea*, but the specimen was not bearing any spores. (*J. Clarke*).—*Panicum plicatum*. (*P. James*).—1, *Agapanthus umbellatus variegatus*; 2, *Gasteria verrucosa*; 3, *Begonia insignis*; 4, *Begonia metallica*. (*M. P.*).—*Crassula laeta*. (*An Inquirer*).—*Eupatorium riparium*.

## THE HOME FARM:

### POULTRY, PIGEON, AND BEE CHRONICLE.

#### HOUSE AND SHED FEEDING OF SHEEP.

(Continued from page 493.)

HAVING given in last week's Journal a sketch of the plans of house-feeding, &c., by Sir R. Simeon, the Rev. A. Huxtable, and Mr. Mechi, we must say that our proposal for earthing the pits is not only the best way to preserve the manure, but also to preserve the health of the animals, because the air will be pure, and there will be no cold draught under the animals, the pits being partially or nearly filled with earth and manure, to be removed when inconveniently full. We will now proceed to give experiments relative to the advantages of house feeding compared with that of the open field, and also relating to the economy of the food consumed by the sheep during the period of fattening.

One of the first experiments as illustrating the advantage of shed feeding of sheep was carried out by the late Lord Ducie. One hundred sheep were placed in a shed, and ate 20 lbs. of Swedes each per day, whilst another hundred in the open air ate 25 lbs., and at the end of a certain period the former animals weighed 8 lbs. more than the latter. A still better illustration is given

by a Mr. Childers, as related by him in the Journal of the Royal Agricultural Society of England. A small yard was enclosed in the winter with post and rails, and a low thatched shed erected just large enough for twenty sheep to lie down in at once. The floor of this shed was boarded with rough slabs and raised 18 inches above the ground, and placed three-eighths of an inch apart, in order to allow a free passage of water and to keep the boards dry, as it was feared that the sheep might get the foot rot. On the 1st of January forty wether hogs were drawn out of his flock of Leicesters and divided into two equal lots, as near as they could be separated as to quality. On weighing each sheep the weight of one score was found to be 188 stone 8 lbs., and that of the other was 184 stone 4 lbs. The first lot was put into the yard with shed, and the other lot placed on turnips upon a field of dry sandy soil, well sheltered, and peculiarly favourable and healthy for sheep. Each lot received exactly the same quantity of food—viz., as many cut turnips as they could eat, which was about 27 stone per day, or nearly 19 lbs. each; 10 lbs. of linseed cake, at the rate of half a pound per sheep per day; half a pint of barley per sheep per day, a little hay, and a constant access to salt. For the first three weeks both lots consumed equal portions of food, but in the fourth week there was a falling-off in the consumption of the hogs in the shed of 8 stone of turnips per day, and in the ninth week there was a falling-off of 2 stone more; of linseed cake there was also a falling-off of 8 lbs. per day. The hogs in the field consumed the same quantity of food from first to last.

The result of the experiment was as follows:—From the 1st of January to the 1st of April the twenty shed hogs increased 56 stone 6 lbs., the twenty field hogs 36 stone 8 lbs., being per sheep 8 lbs. each per week for the former, and under 2 lbs. each per week for the latter—consequently, although the sheep in the shed consumed nearly one-fifth less food, yet they made above one-third greater progress. Now, this result shows the pecuniary advantage of attending to the comfort of sheep as well as other animals, the expediency of providing shelter when the weather is severe, and lessening their exercise. We shall quote one more experiment as carried out by a farmers' club some years ago, with the view of testing the feeding properties of different breeds of sheep fed under cover, the result being in favour of the Long-wooled Lincoln. The facts brought out, and the total result, are rather interesting and important to the home farmer. There were forty-two sheep altogether, each of which consumed on the average 26 lbs. of roots per day and rather more than half a pound of linseed cake. The average quantity of mutton made was 1 lb. 10 ozs. per week. We have other experiments which give as the result of consumption of 160 lbs. of turnips to make 1 lb. of mutton if fed in the open field, whereas when fed and housed in sheds under favourable circumstances 100 lbs. have succeeded in making the same quantity of mutton. This proportion of 160 lbs. of roots to 1 lb. of mutton being derived from numerous carefully conducted experiments made by different people is as near the fact as we are likely to arrive. It is somewhat important and interesting, because it may sometimes assist in estimating the feeding value of a given quantity of roots by taking the value of mutton per stone at the time, as it requires something like 1 ton of roots to make 14 lbs. of mutton.

A most important consideration arises after reflecting on the above results of feeding both under cover and in the field, whether shed feeding cannot be carried out in the open field. If this can be effected, and the manure left with tolerable regularity over the land, it must be of great consequence, for we acknowledge readily the great cost of carting the roots to the homestead, and afterwards carting the manure to the field. This matter has been tried in various ways; by erecting temporary shelter by thatched hurdles, and laying down straw for the animals to be upon—in fact, in severe weather we have known straw laid down without any shelter, and the sheep always are glad to resort to it to lie upon. But a very serious objection arises, the manure being left chiefly where the bedding was laid, and at the same time we have known it to increase the spread of lameness and foot rot; let us

therefore consider the advantage of a light iron shed upon a sledge or wheels, and therefore moveable daily, in order that the manure may be left with tolerable regularity. We will take 15 feet as the length, and from 10 to 12 feet as the width of the shed, with a ridged roof, closed on one side and both ends, with a sparred floor of wood, similar to that we have described for the floors in house or boxes. In such a case the manure, both liquid and solid, would pass through and manure the land with as much regularity as the removal of the shed will admit, the animals would be fed in troughs in the open, and only resort to the shed when the land was wet and the weather severe. Several sheds may be used at the same time if the number of sheep require it. We suggest this plan as the only one we can advise, having looked at the subject in every possible way. It only remains to be considered whether the house feeding or shed feeding in the field is the most economical. There are always so many circumstances to be considered that we will not now undertake to say which is most advantageous, as either plan may be useful under varying conditions. House feeding may be done with very little expense by the internal division of an old barn, and making a feeding path across each bay with iron hurdles, thus affording a large pen on either side of the path for the sheep to live and lie in, the floor of the barn being reserved for the store of hay, straw, and roots, and preparing the food. These pens for the sheep may be used by straw bedding, &c., as in shed feeding, or floored with spars for use without straw as before described. In the old barn the ventilation will be good as well as the shelter, and in foggy and close weather, the doors being left open, the accommodation would be perfect in all respects. By this means we obtain all the advantages required at the least expense, appropriating where possible old barns to accommodate cattle, sheep, horses, or swine, and we know of many such at present really preferable to buildings newly erected, and at a heavy cost. It will be readily seen by the home farmer how easy it will be to adapt or erect accommodation for all animals which it may be desired by the proprietor to exhibit for prizes. Any kind of stock attended to properly in feeding, when carefully housed, will be sure to stand the best chance for reward on the day of exhibition; and we have referred to this matter most minutely, owing to the great objection made sometimes by gentlemen who do not entertain the question of exhibiting animals, because it takes the home farmer out of his usual course of management.

#### WORK ON THE HOME FARM.

**Horse Labour.**—This work has been greatly impeded lately in consequence of the frosty weather, the usual winter fallowing is therefore in arrears, and a considerable portion of wheat is still unsown. As soon as the weather proves open and mild wheat sowing will be resumed; and although it may be delayed, we ask the home farmer to disregard the observations of some who say the wheat should not be sown in the month of January. We say from our experience drill the wheat after turnips fed off, or that might have been left over in consequence of the lateness of the season, the first opportunity when the land can be worked easily, and the land settles down closely around the plants more like it does in autumn-sown wheat. Should the drilling not be effected until February or March it is best to drill the wheat at 9 inches distance between the rows, in order that it may be hoed if occasion required, spring-sown wheat being more infested with weeds generally than that sown in autumn, and may therefore be hoed with advantage, and clover seed hoed in if it is intended to be followed with grass for hay. Various kinds of work also may be done whilst frost prevails, such as carting chalk from the pit or vessel, if obtained by water carriage, and laid out on the land at once. This is better than carting to a heap, as it saves the second carting and is more likely to meet with frost to reduce and separate the large lumps. Carting of dung and earth may now be done with advantage, the latter especially; and the home farmer should at odd times all the year round be adding to the earth heap, extending it in one direction, and shortening the heap when it has been accumulated long enough to have become mellow and fit for use in earthing the cattle pens, pigsties, &c.

**Hand Labour.**—This will now consist in attending the threshing machine, stacking the straw, &c.; and, in case the straw should be required for chaffing as cattle food, it should be spiced or flavoured at the time of rickling. In all the best corn-threshing machines it is turned out nicely winnowed, whether of wheat, barley, or oats. We have a new screen for separating the malting barley from the thin, which may be only fit for grinding, and it is of great importance to the home farmer to have his grains for different purposes separated at moderate cost. We have previously recommended a corn screen sold by Coleman & Morton, but we now advise the use of a screen exhibited at Islington Hall during the Cattle Show, called the Polygon Corn and Seed Screen. There are three numbers of them, adapted for various purposes, at a reasonable price. It is absolutely perfect in separating charlock and other weed seeds from wheat, barley, or oats; also will separate plantain seed from clover, stoneweed from trefoil before being milled, and lastly it will separate barley from oats, which is a most important point, for when dreg is grown upon mixed or heavy soil the

barley is invariably stouter than when grown alone. The screen is sold by Perkins, Paternoster, & Co., The Ironworks, Hitchin, Herts. The threshing of barley proves almost as bad in yield as wheat, and unfortunately the malsters complain that the barley, which in some few cases is plump in sample, will not sprout with regularity, and that they are therefore buying the foreign barley instead, the best we have seen being Danish produce, which they say works well. This is a serious matter, for if our own barley cannot be sold for malting it must be sold for 10s. per quarter less money, and for grinding purposes chiefly. This will also to some extent affect the value for seeding purposes next spring. Some farmers say that it will vegetate better if allowed to remain in stack for a few months; but we are not sure of this, as the barley did not ripen as usual. In feeding fattening cattle the roots will either be cut or pulped. In either case the possibility of choking is removed, except when the slicer is used in cutting, for larger pieces pass through the slicer than is possible when Gardner's cutter is used. There is, however, always some risk in feeding young stock or dairy cows with whole roots or cabbages with strong stumps, especially in frosty weather when the roots are partially frozen, for the cattle take them into their mouths, and in the endeavour to masticate the last piece it often slips over the roof of the tongue and is sometimes the cause of choking. The home farmer should therefore be prepared with the patent elastic probang, one end being globular with holes in to allow the air to pass into the tube in cases of hoven or blown, the other with a kind of cup to be introduced into the throat of the animal for the removal of portions of roots which may obstruct the passage of the gullet. Sometimes, however, gruel given warm composed of oatmeal and a little oil will remove the obstruction, and this should be tried in ordinary cases before using the probang; but in case the obstruction is very serious, and the animals have great difficulty in breathing with extension of stomach like hoven, the probang should be used without delay. The Dorset down ewes will now be lambing, therefore the shepherd and under shepherd or assistant will both have full employment by night as well as by day, and where the lambing fold is not close to the shepherd's cottage a house upon wheels will be necessary, to afford the shepherd and his assistant shelter in bad weather, so that they may look to the ewes by turns at night time.

#### THE POULTRY CLUB.

A COMMITTEE Meeting of the Poultry Club was held during the Birmingham Show time: present, the Hon. and Rev. F. G. Dutton (President), the Hon. and Rev. A. Baillie-Hamilton, A. Darby, R. E. Horsfall, S. Matthew, Rev. J. D. Peake, E. Pritchard, Rev. W. Serjeantson, and O. E. Cresswell, Hon. Secretary.

The following new members were elected:—Rev. E. H. Morgan, Jesus Coll., Cambridge; E. W. Morris, jun., Cherwell Cottage, Widdington, Oxon; G. P. Pointer, 80, Goswell Road, Islington; Rev. E. C. Pritchard, Luton, Beds.

Various questions of private dispute were laid before the Club, but promptly settled in accordance with the resolutions of the Committee. Miss May Arnold had forwarded a statement concerning the two late contests of incubators at Hemel Hempstead. It was carefully considered, and it was resolved that Miss Arnold be requested to have in readiness evidence which she offered to supply, against further consideration of the matter, which was necessarily postponed, as Mr. Peel, Secretary of the said contests, is out of England. It was resolved that aid should be given by the Club to shows which accept its rules and apply for the same, and it was voted that six classes with prizes to the amount of £8 10s. in each should be guaranteed by the Club against loss at both the Shrewsbury and Wolverhampton Shows.

#### STRAINS OF POULTRY.

CONTINUING our remarks from page 494, we advise every fancier who takes a pride in his or her birds, and who wishes to derive real pleasure from them, to set systematically to work to establish a real strain of a special breed. It may at first seem more attractive to keep three or four pens, each of a different variety, selected in a happy-go-lucky way. There certainly is much temptation to multiply our breeds, but if any permanent pleasure and real fame is desired it is far better to keep two or three pens of one kind, or in the case of those whose space and means allow it of two or three kinds, than to divide yards and interest among several sorts. If a beginner has a fancy for some particular breed, but is not sure what strain of that breed he prefers, he may well have one pen from one stock and another from another, and observe the difference of the produce and retain whichever turns out best; every chicken must be carefully marked beyond possibility of mistake, or the experiment will be worse than useless and end in general confusion. It is very common for poultrymen to trust to remembering which chickens have come from a pen; this does very well up to a certain point, but then a time comes when they develop rapidly, the broods are broken up, and the sexes separated and then when distinction is really important

they can no longer be traced with certainty. This difficulty must be obviated by some indelible private mark. It is often a good plan, when a race is vigorous and is known not to have been closely inbred, to mate a peculiarly handsome bird directly with its parent. This may astonish some of our readers, and is directly contrary to the advice to be read in most poultry books; but we could quote many instances of its good result. We especially have in mind a splendid strain of Dark Brahmas thus begun; some characteristic beauty may thus be strongly stamped on a family, which may then be kept up for generations. Of course such a reunion must not be frequently resorted to, but through it probably first and second cousins will come of much the same type, and they again can be mated together for its perpetuation. It is well to note down to whom the best of our stock go. We have more than once refreshed our strains by buying some birds back of them for the sake of fresh blood, which course we much prefer to introducing absolutely "raw" crosses.

There are unfortunately some breeds of which it is almost absolutely necessary to keep up two strains if we desire to please the taste of the judges in both sexes. We have often inveighed against this system, and do not care now to return to the charge; suffice it to say that we believe it has done more to puzzle and disgust young fanciers than anything else. Even in the case of their breeds we fancy that careful selection and a gradual drawing together as it were of the two strains, may in time produce a race from which both sexes may be produced in excellence. We certainly have known this accomplished in a renowned yard of Dark Brahmas, and also to some extent in a not unsuccessful one of Golden-pencilled Hamburgs. The result of a systematic attempt to work up a strain is year by year seen more clearly, and cannot but be a source of much satisfaction to a genuine fancier; instead of a multitude of young birds of many types, few good and many bad, every year greater uniformity in the desired points is seen, and it becomes unnecessary to breed a great number from which to select; this re-acts for the good of those which are reared, and gives them greater size and vigour; for this and quick development there is nothing like rearing poultry in small numbers. We shall be only too pleased if these very general hints about strains should induce some young fancier to set about working up any one breed to a high standard of merit, we are sure that his occupation may be made profitable as well as pleasurable.—C.

#### POULTRY REQUISITES.

FOWLS require pure air, and plenty of it, at all times; therefore see that the hen houses are always clean and well ventilated. They should have fresh clean water daily, and never be allowed to go thirsty. Feed them regularly two or three times a day all they can eat up clean. Do not crowd your fowls in their quarters; give them as much room as possible to move about, and sufficient roosting accommodations. Subscribe for and read a poultry journal, follow out the advice and experience given in it by older breeders, and you cannot fail to succeed. There is very little, if any, hard work attached to it. It needs attention, however, and a share of good common sense, coupled with ordinary judgment in the manipulation, to produce and raise good fowls. You must be patient, and satisfied to reap your reward after the work is done, the same is at any other business. Do not be in haste to buy from the first man that you know has stock to sell. Ascertain who has good stock of the variety you intend to keep, pay a fair price for it, and you will be satisfied with the result. Begin aright, and continue to give the work a fair share daily of the necessary supervision that you would give to any other business from which you would expect to derive profit or excel in.—V. J. GIBSON (in *American Pigeon and Poultry Bulletin*.)

#### VARIETIES.

THE Exhibition of Canaries and British and Foreign Cage Birds which opens at the Alexandra Palace on January 26th, and continues for three days, will probably be a very large one. The schedule contains seventy-three classes, divided in four sections—viz., Canaries, British birds, Birds of Passage and Foreign birds. Three prizes are offered in each of the forty-five Canary classes, and two prizes in most of the other sections.

At the Dorset County Poultry and Pigeon Show, which opens on January 14th in the Town Hall, Dorchester, we observe that ten silver cups and nine pieces of plate are, amongst other prizes, provided for competition. Amongst the donors are the President of the Show, Lord Allington; W. E. Brymer, Esq., M.P.; The Mayor of Dorchester, William Durdon, Esq.; Col. Denne and officers of the Royal Artillery; Captain Sutton, F. F. Sutton, and W. W. Turner, Esq., &c.

Two correspondents, "J. D. W." and "R. J. S." desire to know where Langshan fowls or their eggs can be obtained pure. Those having them should advertise, as there are no doubt several who would be glad to obtain this variety of fowl.

AMERICAN AND CANADIAN FOOD.—During the whole of last week there was not a single head of either live cattle, sheep,

or pigs landed at Liverpool from the United States and Canada, a circumstance which has not occurred for many months past. The quantity of fresh beef brought during the same period was, however, large, and the arrivals of mutton, though not up to the previous week, were still above the average of recent weeks—namely, 6857 quarters of beef, 1444 carcasses of mutton, and 108 dead pigs."

"THE Londoners," says the *American Agriculturist*, "will have a jolly good Christmas this year, for they have plenty of American beef and flour, Western turkeys, New York and New Hampshire apples, oysters and prairie chickens, besides Angelica wine from California. Little did Cornwallis anticipate such a state of things when he was surrendering Yorktown to Washington a hundred years ago."

PROFESSOR SHELDON, in his work on dairy farming, assumes that 850,000,000 gallons of milk are annually made into cheese in England, and 550,000,000 gallons to butter. The quantity of the former product made is 126,000 tons, and of the latter 89,285 tons.

THE very fact, says the *Irish Farmers' Gazette*, that the enormous sum of £8,000,000 is paid in one year for eggs and poultry, which are imported chiefly from France, and also from Canada and the States, and the high prices obtained for such articles, show that the home producer has a very ample field at command for extending his operations. The fact is, large farmers have hitherto regarded the production of poultry and eggs as a matter of minor importance which did not call for any special attention. It was tolerated, as it afforded a small supply of pocket money to "the mistress" and her daughters, which prevented the disagreeable necessity of extracting money from the parental purse when a fresh supply of ribbons or other essential accessories of female adornment were required. The poultry yard also afforded an agreeable variety in the ordinary dietary of the farmhouse; so that altogether it was a useful, if a minor, department of farm-yard industry.

THE AGRICULTURAL GAZETTE ALMANACK which we have received contains a great amount of valuable information of interest to the agricultural community. The special articles on several important subjects are admirably written; and the issue is embellished with portraits of notable agriculturists and machinists, the frontispiece appropriately containing a good likeness of the Duke of Bedford, the President of the Royal Agricultural Society. Some celebrated prize cattle are also represented by various engravings. It is an excellent publication of its kind.

A CORRESPONDENT has sent us a peacock butterfly which he found during the recent cold weather flying about in his drawing-room. The occurrences of butterflies during the winter months in sitting-rooms may be thus explained. These insects that suddenly appear on the wing had entered the house some time in autumn while seeking a place to hibernates. Lodged there, perhaps amongst curtains or in some nook, they are roused from their retreats either by a noise or other disturbing cause, or by a higher temperature near their place of lodgment.

Now that insect food is getting scarce we must, says the *Prairie Farmer*, provide our fowls with something in its place if we expect them to attend to laying duties. Those fortunate individuals who live near butchers can usually get all the meat they need for the fowls, but less favoured mortals are frequently put to their wit's end to provide a meal of meat for the biddies. If you have milk, sweet or sour, or buttermilk, give your fowls a pan of it every day, and they will need no meat. At hog-killing time save all the refuse scraps that usually go to the cats and dogs, salt them in an old keg, and you will have plenty of meat for your fowls. The best way to feed it is to freshen, boil until tender, chop fine and mix with soft feed, using the water that the meat was boiled in for mixing the mass. A little meat will go a good way—too much meat does more harm than good. A half pint of chopped meat is enough for a dozen fowls, and it should not be oftener than twice a week. It is more work to cook meat for fowls than it is to throw it to them raw in chunks, but the cooked food is the most economical, and if you expect to make poultry pay well you must study economy in everything.

#### BEEES AND BEE-KEEPING.

BEE-KEEPING will never fail to be an interesting and pleasure-yielding pursuit, there being so many instructive facts connected with the habits and history of bees. It has always been surprising to me how easily bees find honey-bearing flowers, and how much they gather from them on the very first day of arrival in a strange place. The wonders of bee life are innumerable. Note two of them—first, the secretion of wax; second, the deposition and distribution of eggs. Wax is useful in domestic economy, and seems to be indispensable to men in various arts and sciences. It is a secretion of bees. Somebody has said that bees both "sow and reap," meaning thereby, I presume, that they fertilise flowers while gathering honey. But it is more correct to say that bees in making wax are both "servants and masters." They make their own bodies into wax manufactories when they need wax.

When wax is not required it is not made, the machinery of the factory is stopped. Where else in nature have we a marvel like this? Where else such economy as this voluntary cessation of a natural secretion?

Now for a word about the mysteries of the eggs of a queen bee. She produces what may be called male and female eggs; both it is believed are originally alike, but acted on differently in passing through the oviduct. The fertilised eggs are female in character, and the unfertilised eggs are male. The female eggs are laid in worker comb, or the smallest cells; the male eggs are laid in drone comb, which has larger cells. The reader may say, "There is nothing mysterious in all this." No, there is not much if it be admitted that the queen bee has power to determine sex before her eggs are laid, and also to discriminate and separate the male and female while laying, depositing both in their proper cells. The possession of such power is very extraordinary, and perhaps is unparalleled in the whole range of nature. If the queen does not possess the power of determining sex and discriminating between fertilised and unfertilised eggs our difficulties are not lessened at all, the mystery is quite as great. The eggs are properly deposited, each sex in their proper places. Probably the separation is made by some unexplained and unexplainable attribute of the queen by some unerring law or instinct beyond the ken of mortals. Two naturalists—viz., Professor Owen of England and Professor Siebold of Germany, have very carefully examined under the microscope fresh-laid eggs, and found traces of a difference between those that are female and those that are not. Some years ago I took some drone eggs (a piece of drone comb containing eggs) from a hive, and gave them to another hive without a queen. The bees most gladly accepted the eggs, and at once began to erect royal cells around five of them. The eggs became maggots and were sealed over at the proper time. Evidently the bees were satisfied, and expected queens to issue from these cells, but their hopes were blighted. On or about the sixteenth day after the eggs were received and adopted the royal cells were cut out and opened. The grubs were all dead. I was then convinced of two things—that eggs are of a fixed sex, either male or female, and that the working bees do not know the one from the other. In this experiment the treatment given was improper and killed the grubs. It is not at all unlikely that deeper researches and fresh discoveries will be made in bee-history, and cause additional interest to be taken in our little favourites. "Every day it may be said that old and apparently established theories fade away and give place to others very different; indeed, it may be said that we are still engaged in studying the introduction to the natural history of bees."

Those who have studied the honey bee anatomically and microscopically tell us that it is a wonderful creature in its structure and mechanism—that externally and internally it is beautiful and complicated, presenting striking features that are admirably adapted to its habits of life. It has many handy instruments about the mouth—toothed shears for clipping and gnawing wax and propolis; trowel-mouthed blades for plastering and moulding; a long narrow tongue, which serves in the building of the cell walls. A bee has six legs, five joints to a leg; and its legs are used for more purposes than locomotion. It has baskets on its hind legs for pollen, and forked claws at their points—useful in domestic work and for holding by. The antennae or feelers of the bee have thirteen joints, and are wonderful and useful organs. It has been fancied by some that the antennae of bees perform the functions of hearing, smelling, and feeling; but this is an unsettled question. That the antennae are organs of feeling is evident. When bees are deprived of them they seem to become quite imbecile. The eye of a bee is said to contain above three thousand small but perfect hexagonal lenses, and is considered one of the most exquisitely constructed optical instruments in nature. The wings of the bee are strong and tough, four in number, two larger and two smaller; and what is remarkable is the fact that two wings on each side of the bee can be hooked together and work jointly as an unbroken surface or fan. On the edge of one wing there is a rim or bar, and opposite, on the edge of the other wing, there is a row of hooks, which when connected lock the two wings together, and when thus used in fanning the hive they vibrate rapidly and create a strong current of air.

In condensing and presenting these thoughts on the anatomy of the honey bee from the works of writers on the subject I have left but little space for remarks on bee-keeping. Profit-and-loss balances in bee-keeping are the paramount consideration with me. The year now near its close has been one of great depression and loss; dull trade from beginning to end, bankruptcies and liquidations everywhere—the worst year for bees I have ever known. 1886 and 1861 were bad enough, but I think 1879 was worse. One thing can be said in favour of 1879—it was no respecter of districts, but affected England, Ireland, and Scotland alike. All apiarians felt and suffered from the unfavourable season. But practical and experienced bee-keepers are not easily discouraged. They look hopefully forward, and ever find themselves more engaged with the future than the past. Hives may be rather weak in spring. The queens in some hives will be a year too old. Nursing and care will be required, but now-a-days

apiarians have knowledge and cultural skill. Some ten years ago it was hardly possible to find a person in England with an intelligent and comprehensive knowledge of bee-keeping; now we have thousands of apiarians who possess a knowledge of the principles of theoretical and practical management of bees, and many of them are able teachers, and act as such in their neighbourhoods.

The motto given to bee-keepers for the last two years was "Onwards—excel," for next year it is "Never despair." Bee-keepers who have had their stocks reduced in number or lessened in strength should commence again and look hopefully forward. We have fifty stocks, and have as much confidence in them and the future as anybody ever had.

In wishing all apiarians a happy and successful new year, let me suggest the importance of aiming at excellence—pursuing an independent course of management, remembering that those who follow are always behind. It is well known that novelty has charms to the young and inexperienced, but all should remember that new ideas in science and practice cannot be properly valued until time has sobered the enthusiasm of their advocates.—A. PATTIGREW.

### THE SWISS HONEY-CAKE.

In Switzerland and Italy a peculiar kind of honey-cake is always found on the dessert plates of every table d'hôte—i.e., the dinner table where a regular course is served up at a stipulated price to all guests alike. The *Continental Gazette* of August 28th gives the following description of this honey-cake, or "Leckerli," as it is called:—

Every tourist in Switzerland quickly becomes acquainted with the oblong little biscuit compounded of honey, flour, and certain roots, which goes by the name of "Basler Leckerli." He sees it invariably on the dessert plates at every table d'hôte; the waiters of the Basle hotels are almost certain to thrust a packet of it upon his notice before he leaves the city; on his way to Basle or on his way from it, at the buffets of nearly every railway station in Alsace and Baden, he will be confronted by a small glass case with the superscription "Basler Leckerli," or the French adaptation, "Leckerlis de Bâle." He may or may not be pleased with the curious flavour of this widely-advertised delicacy of the local confectioners, which is as famous in Basle as the "Leberchen" in Nuremberg and Berne, or the "Spanish bread" in Baden. Here and there in the streets of Basle he will come upon a manufactory of the article—"Leckerli-fabrik"—the sight of which will give him some conception of the enormous quantities of this piece of confectionery which are produced in the town of Holbein and Erasmus. A Swiss "Cook's Lexicon" gives no fewer than fifteen recipes for the concoction of Leckerli, and the popular dialectic poet of Basle, Theodor Meyer Merian, has devoted an entire poem to its history, qualities, and uses. The greatest trade in it, however, is done during the Christmas season. Thousands and thousands of packets are then sent by the Swiss to their friends and to children through the post; and it is said that a Switzer never goes to Basle on a tour of business or pleasure without being strictly charged by his wife and children, "Be sure to bring back a packet of real Leckerli."

### METEOROLOGICAL OBSERVATIONS.

In consequence of our going to press earlier than usual this week the publication of the meteorological observations must be postponed until our next issue.

### COVENT GARDEN MARKET.—DECEMBER 24.

FRUIT.				VEGETABLES.			
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
Apples.....	½ sieve	2 6 to 4 6		Melons.....	each	0 0 to 0 0	
Apricots.....	dozen	0 0 0 0		Nectarines ..	dozen	0 0 0 0	
Cherries.....	box	0 0 0 0		Oranges .....	½ 100	4 0 12 0	
Chestnuts.....	bushel 12	0 16 0		Peaches .....	dozen	0 0 0 0	
Figs.....	dozen	0 0 0 0		Pears, kitchen.	dozen	0 0 0 0	
Grapes.....	½ lb.	0 0 1 0		dessert.....	dozen	2 0 4 0	
Gooseberries....	½ lb.	0 0 1 0		Pine Apples ..	½ lb.	1 6 3 0	
Grapes, hothouse	½ lb.	1 6 4 0		Plums .....	½ sieve	0 0 0 0	
Muscats .....	½ lb.	3 0 6 0		Raspberries ..	½ lb.	0 0 0 0	
Lemons.....	½ 100	6 0 10 0		Walnuts .....	bu-hel	0 0 0 0	
				ditto .....	½ 100	0 0 0 0	
Artichokes.....	dozen	2 0 to 4 0		Mushrooms ....	pottle	1 6 to 2 0	
Asparagus .....	bundle	0 0 0 0		Mustard & Cress	punnet	0 0 0 0	
Beans, Kidney ..	½ 100	1 0 1 6		Onions .....	bushel	2 4 4 0	
Beet, Red .....	dozen	1 0 2 0		Pickling .....	quart	0 4 0 0	
Broccoli.....	bundle	0 0 1 6		Parsley.....	doz. bunches	2 6 0 0	
Brussels Sprouts	½ sieve	0 0 3 0		Parsnips .....	dozen	0 0 0 0	
Cabbage .....	dozen	1 0 3 0		Peas .....	quart	0 0 0 0	
Carrots.....	bunch	0 4 0 8		Potatoes.....	bu-hel	3 6 4 0	
Capsicums.....	½ 100	1 6 2 0		Kidney.....	bu-hel	4 0 6 0	
Cauliflowers .....	dozen	3 0 6 0		Radishes.....	doz. bunches	0 0 0 0	
Celery .....	bundle	1 6 2 0		Rhubarb.....	bundle	0 0 0 0	
Coleworts.....	doz. bunches	3 0 4 0		Salsify.....	bundle	0 0 0 0	
Cucumbers.....	each	0 6 1 0		Scorzonera.....	bundle	1 0 0 0	
Fennel.....	dozen	1 0 2 0		Seakale.....	basket	3 0 3 0	
Endive.....	bunch	0 3 0 0		Shallots.....	½ lb.	0 3 0 0	
Fennel.....	½ lb.	0 6 0 0		Spinach.....	bu-hel	2 6 0 0	
Herbs.....	bunch	0 2 0 0		Turnips.....	bunch	0 6 0 0	
Leeks.....	bunch	0 3 0 0		Vegetable Marrows	each	0 0 0 0	











